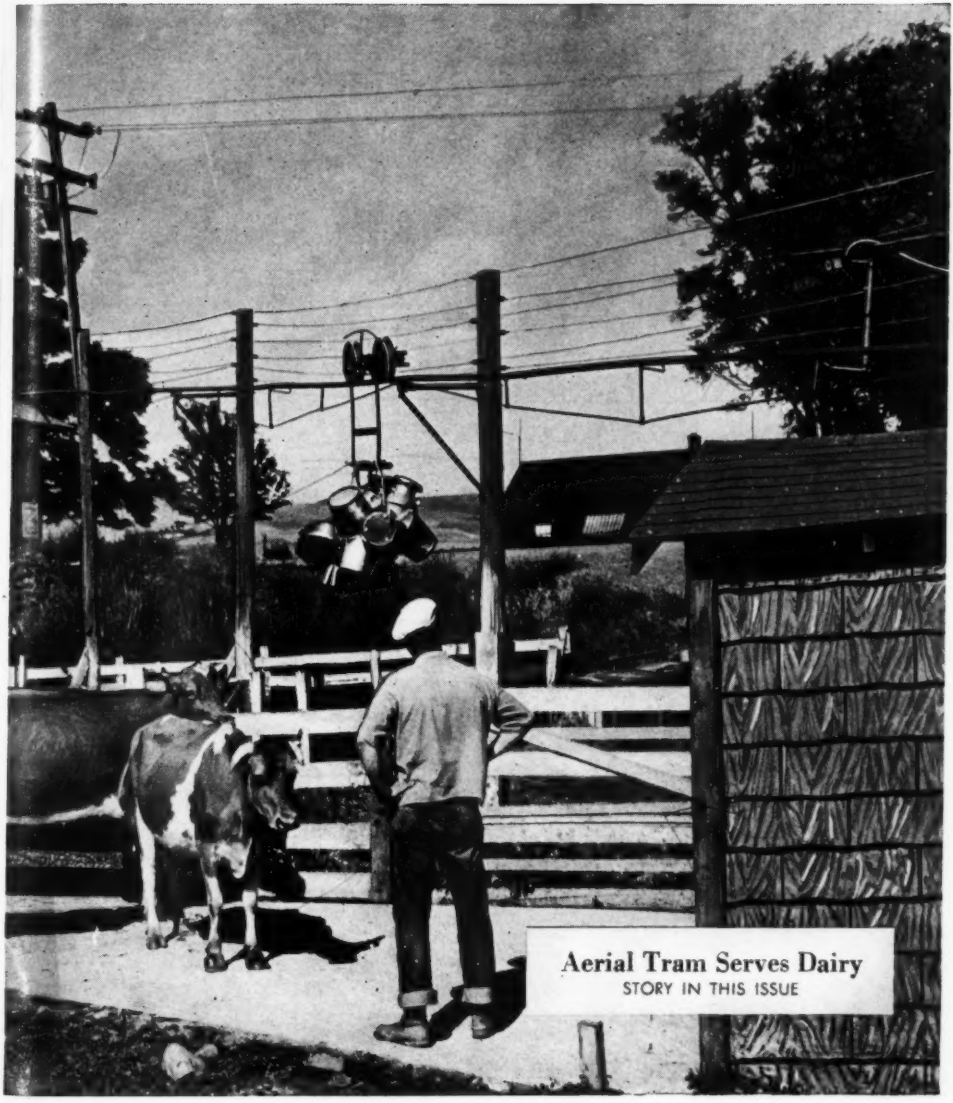
ELECTRICITY ON THE FARM *Magazine*

NOVEMBER, 1951

Don't Save Garbage—Save Steps
Use a Hay Hoist This Winter . .
Barn Cleaners Here to Stay . .
Kitchen That Works for You . .
Homemade Grader Sorts Bulbs . .

24th Year . . . No. 9



Aerial Tram Serves Dairy
STORY IN THIS ISSUE

A CASE-SHEPPERD-MANN PUBLICATION

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For quality in electrified farm equipment . . .

GENERAL ELECTRIC

FarmNews

. . . look for these labels whenever you buy.

MORE POWER TO THE AMERICAN FARMER through more electricity on the farm

WATER SYSTEM BOOSTS MILK OUTPUT 14%

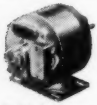
Ohio Dairy Concern Reports This Big Gain After Installing Electric Water Pump

Modern electrically powered farm water systems play a big part in the profit picture of the Isaly Dairy Farms in North Jackson, Ohio. And no wonder! Since making a constant and ample supply of water available to cows on their up-to-date dairy farm, they have increased their yearly milk production by 14% and their net increase on milk profits by many thousands of dollars.

Hundreds of hours of labor which would otherwise be spent hand pumping water were saved. It thus makes it possible to release a man for other useful work around the farm. The Isaly water system consists of an 8" well drilled to a depth of 85' and a jet type deep well pump with a capacity of 1,000 gallons per hour. For more information, check "Water System" in the coupon.

New, One-Man Egg Cleaner

Designed to save the smaller poultryman many hours of labor now devoted to cleaning and crating eggs, this new light-weight egg cleaner is easily operated by one person. It has a capacity of 2700 eggs per hour, washed, dried and ready for casing. General Electric equipment is used throughout to make this cleaner completely automatic. The eggs are placed on the entry end of a conveyor, operated by a very low-speed drive.



G-E ¼-hp motor

What Makes It Tick?

The electrical parts of this drive consist of a "built-in" G-E 1/20th-horsepower motor. As the eggs travel the length of the cleaner on the conveyor, they are washed by a warm-water spray which is provided by a small high-speed pump driven by a G-E ¼-horsepower motor (illustrated). A G-E Calrod* heater, immersed in the wash water tank, maintains an accurate, constant heat level. Two G-E toggle-type switches are used, one to start and stop the pump and conveyor motors and the other to control the heater. For more information check "Egg Cleaner" in the coupon.

G-E toggle switch

G-E Calrod* heater

*Reg. U. S. Pat. Off.

5 MIN. A DAY FEEDS 10,000 BIRDS

W. J. Smitherman of Mooresville, Ind. has had outstanding success with his new automatic poultry feeder. In 35 days, he has had to spend only 3 hours of his time feeding his flock of 10,000 birds, or an average of 5 minutes a day! Moreover, it has enabled him to reduce his feed-grain ratio from 3.1 to 2.75 by increasing feed consumption. The feeder will service up to 4 floors from a single hopper and is driven by a G-E ¼-hp motor. For more information, check "Poultry Feeder" in the coupon.

General Electric Co.
Section 671-18C, Schenectady 5, N. Y.
I would like additional information on the following equipment

☐ Water System ☐ Egg Cleaner
☐ Poultry Feeder

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Those whose "Toastmaster" Toasters are still going strong after 20 years eagerly testify to its quality. Millions more, owners in many cases for slightly less time, have by their free choice made it America's most-wanted toaster.

Money can't buy a finer toaster. And take comfort in the thought that the one whom you favor with the "Toastmaster"® Toaster is also aware of that fact. Certainly, your firmness in avoiding a substitute will not go unheeded or unrewarded.

"Toastmaster" is a registered trademark of McGraw Electric Company, makers of "Toastmaster" Toasters, "Toastmaster" and "Scotch Knight" Water Heaters, and other "Toastmaster" Products.

"A little over 20 years ago my husband and I received a 'Toastmaster' Toaster as a wedding gift. It was practical and certainly most welcome. It is still in use . . . it has never required any repairs."

Mrs. Harry Lee Hamilton, 3902 Olympic Ave., Louisville, Kentucky

TOASTMASTER *Automatic Pop-Up Toaster*

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MIRROR OF AMERICA AT MEALTIME

Editor's Chat

JUDAS GOAT

At a meeting of the Agricultural Editors Association in Washington recently, Secretary of Agriculture Brannan said, "On those of us who have had some responsibility for the farm program there rests an obligation to do what we can to offset any further advance of antagonism of the non-farm population. If agriculture is not careful, if its spokesmen are not a little more thoughtful of the balance of the people of the country, if there is not some consideration of the consumers beyond our 16% of the population, the rest may do some things not friendly to farmers." Significantly, Mr. Brannan did not mention his "Family Farm Policy Review," which is simply the Brannan plan under a new name.

Is Secretary Brannan concerned about the future of the farmer or is he more concerned about the future of his own proposed program for agriculture? Most of you by now have heard of this program. "Farmer support" has been solicited by county-wide meetings sponsored by the PMA. Some state agricultural organizations have had nothing to do with it. Why? Just look at some of the proposals advocated:

1. Government buying of land and redivision into "family farms."
2. Direct federal payments to farmers instead of price supports.
3. "Free" governmental management for small farms.
4. More federal crop insurance.
5. A nation-wide system of test farms under federal control.
6. More federal control over the Extension Service and the proposal that the Extension Services should not work with farm organizations.
7. More funds for the promotion of PMA projects among farmers.
8. The right of the federal government to buy any forest land, "unsuited for private ownership."
9. Some kind of a regulation for making everyone go along with the majority in Soil Conservation Districts."

Secretary Brannan is worried about the "popularity" of agriculture. And why shouldn't he be? No freedom-loving American is going to stand by while a socialistic program, based on "Family Farm Policy Review," is adopted.

October 15th was the deadline for reports to be submitted to USDA giving the results of the PMA sponsored county meetings. This did not even leave sufficient time for farmers to study the plan, let alone endorse it. The resulting "opinion" of the American farmer is to be "tabulated"—at government expense. Of course, the farmers' true opinion could have been gotten at no expense to the taxpayer through farm organizations.

Still some of our agricultural leaders in USDA wonder why agriculture is losing support. No group, whether it be labor, industry, or agriculture, is expecting a guaranteed livelihood at the expense of others, least of all the farmers of America.

TODAY'S DOLLAR

The National Life Insurance Company recently compared the purchasing power of our 1940 dollar with the one we have today. And the comparison is revealing. We have 43c dollars and $1.01 dollars. There are many more in between.

If you buy building materials today you get 44c worth for your dollar. The pre-war dollar for clothing has shrunk to half its size. The same goes for coal. Food, and I know this won't be news to you homemakers, is worst of all. The 1951 dollar for food is worth only 43c.

We have a different story when it comes to the comparative cost of electricity. Electric rates have dropped about 1% since before the war. This, in spite of the fact that everything that it takes to generate power has gone up. Coal, a major fuel for generating electricity, has gone up 100%. Still we are able to buy more electricity today ($1.01 worth) with our dollar than we could in 1940. If this be a "silver lining," make the most of it.

VOTE

So this is an off year—and voting is relatively unimportant. I won't buy that. We have the right to vote. It's a privilege. As such it carries an obligation. There is never an unimportant election. For a true reflection of Americas' opinion, your vote is needed. Make sure your voice is heard.

Jim Ridout

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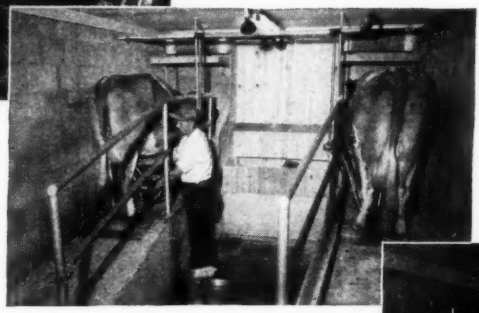
ELECTRICAL TEST FARM SHOWS HOW TO GET TOP-QUALITY MILK

at Lower Labor Cost

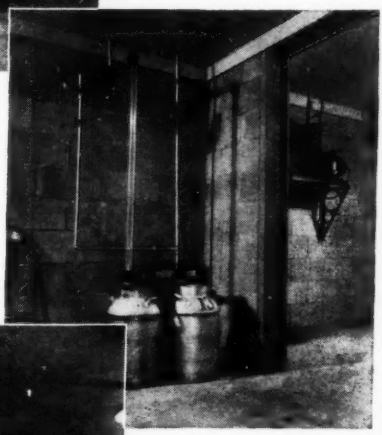
At the Motz electrical test farm in Ohio, sponsored by Westinghouse and the Ohio Edison Co., cows are housed in a loafing pen. As a result, they are cleaner. Less time is required to keep barn clean.

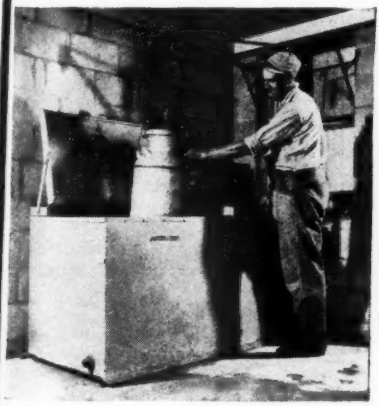


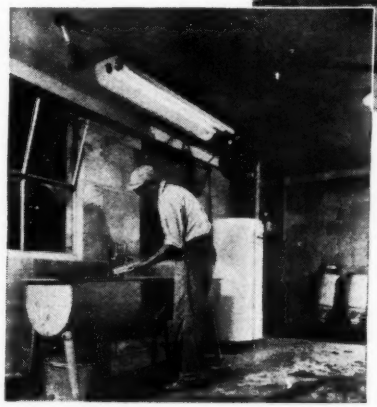
Milking parlor accommodates two cows; milk is piped directly from cow to milkhouse. With a larger herd, one man completes milking in 40 minutes. Formerly it required 50 minutes each for 3 men.

Milk is piped from cows to milk cans so there is no opportunity for contamination. Westinghouse Motor for milker, motor control and all circuit protection for the dairy barn are in passageway to milkhouse (at right).

When filled, milk cans are moved 8 feet to the Westinghouse Cooler, and temperature is reduced to 50 degrees in one hour or less. This system results in an exceptionally low bacteria count. Cooler shown is immersion type. Front opening type is also available.







A Westinghouse 30-gallon Pressure Electric Water Heater provides all the hot water required to wash utensils and cans, and to scrub the milkhouse. Fan-type electric heater maintains safe, uniform temperature in milkhouse; heat lamps add comfort at sink.

Time and cost records, analyzed by the Doane Agricultural Service, show that on the Motz farm the money earned per hour has increased more than 50% by the use of electricity.

For complete information to help in planning or equipping your milkhouse, send for a copy of our Information Bulletin—Electricity in the Milkhouse. Rural Electrification, Westinghouse Electric Corporation, P. O. Box No. 868, Pittsburgh 30, Pennsylvania. G-10187

YOU CAN BE SURE...IF IT'S

Westinghouse

Don't Save Garbage—Save Steps

Modern Farm Septic Tanks Can Handle Wastes from Kitchen Garbage Disposal Units

By MORRIS M. COHN†

The backhouse has been eliminated from the modern farm yard—and the garbage can is destined for the same fate! Modern science is gradually undermining the age-old job of city dwellers who carry garbage to a storage can, hold it until some one comes along to pick it up and then dispose of it on dumps, piggeries or other locations that involve health hazards and a lowering of standards of cleanliness and good taste. Country folks can look forward to the same freedom from their garbage problems.

There is no reason in the world why garbage and country living need to be synonymous. Granted, the average rural dweller can use table scraps for enriching the soil, feeding chickens and "growing pork chops", but modern sanitation standards may soon eliminate these practices.

More than half a million home owners in over three hundred and fifty American communities, ranging in size from great metropoli to tiny hamlets, no longer store their garbage in containers awaiting periodic and frequently undependable collection and disposal. Instead, they have eliminated the slavery of carrying dripping food scraps to the storage container in the backyard or basement and have turned over the job of getting rid of wastes, instantaneously, to an electrical shredding device which is located under the kitchen sink, and attached to the sink and the plumbing drain. Thus, modern technology has substituted the unseen sewer for the much-seen garbage truck as a means of removing dangerous, unwanted, putrefactive wastes from the modern home.

Dramatic, indeed, is the idea of freeing the troubled housewife, the embarrassed man-of-the-house and the objecting children of the age-old job of toting garbage once or twice or three times a day. Imagine wiping out, by the magic of electricity, decomposing accumulations of garbage that breed flies, feed rodents and attract dogs in the summer time and freeze solid in the winter time.

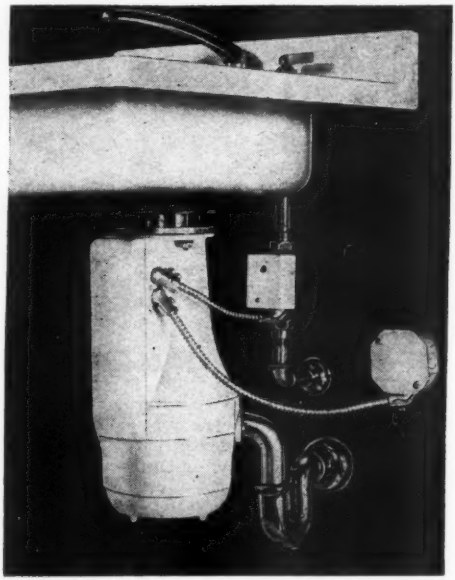
Garbage Collection Eliminated

Even more dramatic has been the creation of the "garbageless city" where garbage is "outlawed", less than twenty-five years after the idea of grinding kitchen wastes into the public sewer system was conceived by one of the great electrical industries of America. The City of Jasper, Indiana is *that* honored city. But other cities are pressing Jasper for honors by promoting the city-wide use of kitchen waste units and eliminating garbage and the handling thereof.

The sanitary engineering profession has witnessed this new achievement in sanitation with great interest. Studies have been made which demonstrate that these wastes mix satisfactorily with sewage, flow readily through plumbing lines and sewers and are successfully treated in city sewage treatment plants. In city life, this new process of no-more-garbage is bound to grow. But the convenience and health benefits need not stop at the end of the public sewer line. Suburban and rural residents can also utilize this disposal process as long as they understand what must be done to make use of this modern innovation.

The city home that uses a kitchen waste unit requires four things: (1) an electrical connection to make the unit work; (2) water at the kitchen sink to make it grind and flush wastes into the sewer; (3) a sewer to carry the wastes away; (4) a municipal sewage treatment plant to properly handle the wastes in combination with ordinary sewage liquid from sinks, bathtubs, toilets, laundry trays and other waste-producers.

The heart of the process is, quite



A disposal unit, installed, showing the electrical connections. The junction box at the right is the main current supply for the unit. That unit installed in the cold water pipe is a flow interlock. It keeps the unit from starting until the cold water is flowing. The waste discharge is through a conventional sewer connection and trap.

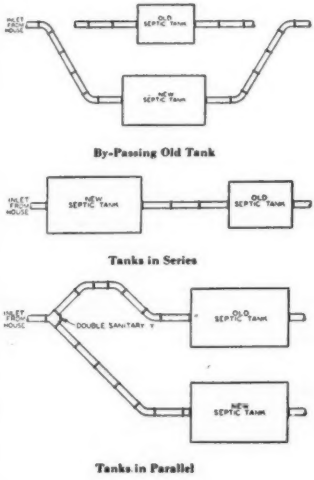
†Mr. Cohn is Editor of Wastes Engineering, New York 18, N. Y.

naturally, the electrical shredder. This unit consists of a compartment in which food-wastes are stored and shredded; a revolving base which carries impellers that force food scraps against shredding elements and convert the material into a uniformly shredded pulp; a one-quarter horse - power motor which operates the revolving base of the shredding compartment. The whole mechanism becomes a portion of the sink drainage system.

How Unit Operates

The action of the unit is like grating vegetables and the finely-cut up material is washed out of the compartment, through a standard trap and into the plumbing drain by water which is supplied from the sink faucet. The unit is actuated by a switch which functions with the unit cover in the sink. In addition to this switch, the unit requires the flow of cold water, at a predetermined rate, before the shredding operation starts. This flow interlock is normally set for a flow of cold water at approximately 6 to 8 quarts per minute. The unit operates less than a minute per day, normally, and thus the water consumption for food-wastes shredding and disposal would be less than 2 gallons per person per day. The cold water solidifies greases and the unit's high speed grinding and aeration action "homogenizes" the grease particles into a non-congealing form. It is the usual experience that "sluggish" sink drains are eliminated by the self-scouring action of the food-wastes. This same scouring action keeps the entire shredding compartment and all of the mechanism clean enough for the most meticulous farm housewife.

Beyond the public sewer line, modern farm and suburban living depends upon two things: (1) water under pressure piped into the home; (2) the removal of sewage from the home by modern plumbing and the handling of this sewage by an adequate septic tank system. The U. S. Public Health Service estimates that about 17,000,000 people in the United States live in suburban areas fringing metropolitan centers and many millions more live on farms. The septic tanks of these homes can handle food wastes and new freedom from garbage is available to anyone having an adequate septic tank system. Hundreds of septic tanks are now serving food-wastes units.



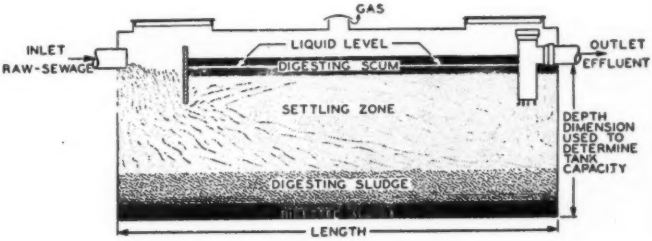
Three plans for installing additional capacity to an existing sewage disposal system.

Parts of Septic Tank System

First of all, how does your septic tank system work? A satisfactory system is composed of two parts: a septic tank for removing the solids from the sewage flow and digesting it into a semi-offensive, disposable organic humus; and a sub-surface drainage system, either in the form of tile drains or a leaching pool or basin, for the purpose of disposing of the clarified liquid which flows from the septic tank. The septic tank may be a steel tank or a concrete chamber or one made of tile. The size of the tile field and the effectiveness of its ability to dispose of the liquids from home operations depends on the nature and permeability of the soil, with sandy gravel being the most effective and clay and rocky soil the poorest.

The solids in sewage which deposit in the septic tank—and this applies also to the food-wastes which would be discharged from a home unit—are partially decomposed by the action of digesting bacteria, with part of the material left remaining in the tank. When the deposit accumulates to the extent that the floating scum and the deposit of settled solids take up approximately one-third of the volume of the tank, the septic tank should be cleaned. Since matter is neither created or destroyed, there is no such thing as the "perpetual motion" septic tank which never requires cleaning.

When food-wastes, properly shredded by a garbage disposal unit is discharged into a septic tank system, the mixture of sewage and food-wastes acts exactly the same as sewage alone in that the solids separate and settle in the septic tank; the solids digest as effectively as sewage solids alone; and the clarified liquid is as effectively discharged into the soil as the liquid from sewage . . . . . (More on page 32)



Cross section of a septic tank. Like any piece of equipment, they require care. When floating scum and settled solids take up one-third of the tank's volume, it should be cleaned out.

Use a Hay Hoist This Winter

It's Just as Useful for Emptying the Mow as it is for Filling It in Summer

By MELVIN K. JOHNSTON†

A power driven hay hoist is a very popular addition to the list of farm machines that is helping to lighten the burden of work during rush seasons. We have found ways to make this piece of equipment speed up and ease chore work the year round.

Ours is a belt driven V-pulley reduction hoist powered by a 3 H.P. electric motor. It is equipped with a manually operated eccentric for applying the power and a manually operated brake for holding the load. Back lash of the cable is prevented by applying friction with the eccentric.

Whenever hay or straw is to be moved in the mow, use of the hoist cuts the work measurably. For moving loose hay we use the hoist and grapple fork. We have an additional trip-stop to use with the hay car. With this spare trip-stop on hand to use inside the barn we do not have to remove the one from the gable end. And so if we wish to drop the fork in any of the six bays we secure the trip-stop over the bay. For instance, we may want to feed all the hay out of No. 2 bay and leave No's 3 and 4 for carry-over. The trip-stop is fastened above No. 2 bay. Hay can be moved to No. 5 bay for feeding or pulled loose for feeding in No. 2 bay. If hay is to be moved in the same direction as when it entered the barn, the hoist is operated in the usual manner. But if the hay is to be moved back toward the gable end a different pulley arrangement is required. Only one other pulley is needed. It is chained to a rafter near the gable end at a point that will allow the rope or cable to operate as nearly parallel to the track as possible. It is a simple matter to thread the pulley by removing the sheave, inserting the looped cable and replacing the sheave. If the hoist is equipped with steel cable it is not necessary to buy a steel pulley for the purpose. An old wood-sheave rope pulley is satisfactory. The cable will wear into the wood a bit but for this limited use it will last a long time.

On one occasion we needed the mow floor clean in one bay. There were still 10 tons of hay there. Two of us moved that pile in about three hours, raising most of it 10 to 12 feet over the beams. And we had some mowing away to do at the dumping end.

By using the hoist this way it is possible for my 12-year old boy and me to pull loose in five minutes enough hay for three days' feeding. We pull out two or three grapple-forkfuls. Either they are dumped in the same bay or are raised to the track and moved to one nearer the feeding chute. That awful back-breaking pull of getting hay loose between bays is turned into a job of merely watching the machine work.

Hay Mower Is Big Help

We also have a hay mower which we like to use as another help in dumping the hay about arm's length from the chute. A word about the mower. This contrivance makes it possible for one man to handle all the hay in the mow that four men or two crews can put in the barn during a good haying day in the summer. It is merely a tilting platform suspended by an open wooden framework. The whole assembly is moved along two parallel tracks about ten feet apart. These tracks are

†Mr. Melvin K. Johnston is a farmer at Grove Acres, Hillpoint, Wisc.

This is the mower which Mr. Johnston uses. Its platform tilts to either side. The hay is dropped on the platform from the hay fork and slides down to either side of the mow. If hay is to drop in center of mow, the mower is pulled out of the way. Its frame is supported by tracks that run parallel with and on both sides of the hay track. If hay is pulled loose for feeding and dumped in the same bay, the mower is moved to one side while the forkful is elevated to the track. Then the mower is moved back under the forkful of hay.

When handling bales, the Johnstons use a rope sling in place of the hay fork. One slingful will take from 9 to 11 bales. It works equally well with round, as shown here, or square bales.

hung from the rafters near the purlin area of the roof. The platform is tilted in either direction to deflect the hay toward the outside of the mow as it is released from the grapple fork on the center track. Or the mower can be moved out of the way allowing hay to fall in the center of the bay. This gadget is a help in handling 500-lb. forkfuls of hay with a minimum of work. But the system of using the hoist is not dependent on the companion use of the mower. Use of the hoist alone can accomplish a mighty saving of work.

It can also be used to handle bales. We use a rope sling in place of the grapple fork. More bales can be handled at one lift and the hazard of bales breaking loose is practically eliminated. We take 9 to 11 bales at one lift. Bales likewise can be moved from one area to another in the barn. In our own case we had to store our second-crop bales over loose hay with straw covering all of it. As soon as some of the second-crop bales were fed out we restacked the remaining bales to allow access to the first crop. So often a farmer must put second-crop hay on top of the first-crop. Accordingly he feeds out the choice second-crop before he can get to the coarser first-crop. If he had some mechanical means of moving that good hay when space became available, he could either parcel out the good hay as the winter progressed or perhaps save it until late spring when the livestock would relish the choicer quality.

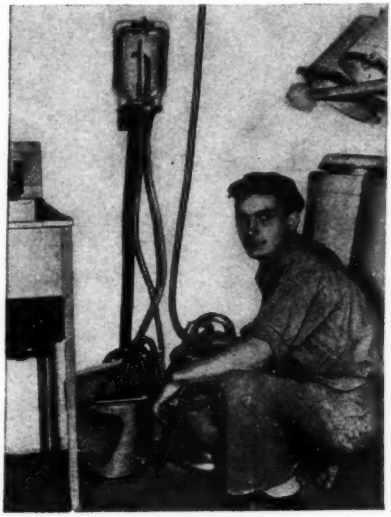
A mechanical hoist then is a boon in haying time but can be a mighty labor saver for the other 8 or 9 months of the year. Even when the sun doesn't shine and we aren't making hay, the power hoist is making chore-time a bit more "sunny."

New Washer for Milking Machine

Efficiency is the keynote at the Charles Shinsky dairy farm near Greensburg, Pa., and as could be expected, modern equipment, much of it electrical, plays a big part in accomplishing a maximum of work with a minimum of physical labor.

The Shinskys (Mr. Shinsky and his sons Bruno and Walter; daughter, Ellen, also helps out at milking time) grow their own feed for a herd of 75, including heifers, and milk 50 or more cows. Their own farm covers 150 acres and in addition they have a neighboring farm of 45 acres. The milk, kept clean and cool in a sanitary milk room, is shipped daily to a large dairy in Pittsburgh, 40 miles away.

The Shinsky farm is one of the few in its area that uses a combine. Ordinarily this ingenious machine is not found in this rolling country. The combine, together with three tractors and other outdoor equipment, lightens the load of plowing, planting, and harvesting.



Bruno Shinsky likes the ease with which the new washer cleans the milker. The cleaning solution reaches all surfaces of the inflator assembly.

Similar efficiency is found in the milk room, where electrical equipment is put to excellent use. Hot water for washing milk cans is provided at all times by an electric storage hot water heater. Milk-filled cans awaiting shipment are kept at an even temperature at all times in a large electrically controlled cooler. Of course, the room is electrically lighted and even has a small radio.

To keep their milking equipment as clean as possible at all times the Shinskys use a Milker Washer, which is an ingenious device that duplicates the pulsating action of the milking machine in circulating the cleaning solution, followed alternately by air, to all parts of the inflator assembly.

Because the milker washer is automatic, the Shinskys are able to go about other tasks while

. . . . . (More on page 18)

Barn Cleaners Here to Stay

Farmers Speak Up in Favor of Barn Cleaners

By LYMAN HAMMOND†

The Barn Cleaner is fast becoming essential to the economical operation of a dairy farm. In addition to saving the labor to do this very unpopular chore, it is a good sanitary practice. The droppings from one cow for a day weigh about 60 pounds. Thirty cows will drop 1800 pounds of manure in one day. This weight lifting can be eliminated with mechanical gutter cleaning.

At the 700-acre dairy farm of the McLean Brothers near Greene, N.Y., the endless chain type barn cleaner is rated as "the cheapest thing we ever bought! We use it more than any other piece of equipment except possibly the milking machine."

The McLean brothers have some other very revealing comments, however. "We were told in the advertising for this equipment that its cost would run from $25 to $35 per cow, installed. It cost us quite a bit less than $25 per cow. "We use it twice a day in the winter, loading up two spreaders in the morning and one in the evening. Once a day does the job in the summer.

"It costs only 8 mills for the electricity to clean the barn each day in the summer, and 1¾¢ a day in the winter. The time for a hired man for the same job by hand would average more than an hour and a half per day—at the going rate for wages.

"Then there's another thing. When the hired man or anyone else is sick, or the pressure of work is on, the barn cleaner goes right on working just the same.

"We've got a herd of 126. But right here in this barn we take care of 62 milkers. Now they need a lot of care taking, and *they get more of it* with the time and the energy we save with the barn cleaner. That means better production per cow, too.

"You couldn't buy our barn cleaner from us for love or money if we couldn't get another. We wouldn't know how to get along without it any more."

†Mr. Hammond is Farm Service Manager, New York State Electric and Gas Co., Binghamton, N. Y.

Richard Schuster installed his barn cleaner when an arthritic back condition made it difficult to clean the stable by older methods. He has found that it will pay for itself in five years. What's more, he feels that it influenced his nephew's decision to become his partner on the farm. The end of the Schuster barn was enlarged in order to house the spreader into which the cleaner dumps the droppings. The addition also included room to accomodate extra young stock.

Reasons for Buying Cleaners

John S. Washburn of Chenango Forks has a little different slant on barn cleaners, because his need for one was more dramatic at the outset. In early Autumn of last year he developed a hernia which rendered him unable to do the heavy shoveling necessary to clean his barn. While he had thought of purchasing a barn cleaner before, the hernia brought the matter to a head. So without delay he called in a local distributor who hurried through the installation, which was complete in November.

With the barn cleaner, John was able to leave all chores in the hands of his wife and two small boys, Richard and Paul. Since Dad's recovery, Richard has continued, with Paul's help, to maintain the barn cleaning operation on his own hook, doing in a few minutes the tiresome job which took his father ¾ of an hour before.

But the end is not yet. The Washburns now figure that the barn cleaner saves them enough time and labor to add 10 more head to their herd of 22 milkers and 20 young stock! What started out as a stark necessity ends up as a sound investment in increased production.

Similarly, Richard Schuster of Afton was nudged into the purchase of a barn cleaner by an increasingly painful arthritic condition of the back. Since then,

perating experience has proved hat the cleaner will pay for itself in 5 years due to increased production. Even more important, he attributes to the cleaner n very large measure the decision of his young nephew to become his partner on the farm.

"We need the young folks on he farm," says Mr. Schuster, and to make farming attractive, ve older folks have to install the worthwhile new things that make farming look a little more ike business and a little less ike drudgery to the youngsters."

Schuster has very wisely expanded the shed built to house cleaner elevator and spreader in single construction operation, o that he can house additional young stock, and clear space within the barn proper for additional stanchions.

Famous throughout the nation s the Round Barn of J. C. Young f Greene. The gutter in this tructure forms a perfect circle, nd presented a problem in construction to barn cleaner distributors.

Once solved, however, Mr. oung's installation has performed without flaw, pleasing im so much that he has recently decided to add a silo unloader to the already numerous lectrical applications on his progressive and highly successful arm.

Mr. Young likes o say that his -year-old granddaughter cleaned he barn for the irst time with the new cleaner—simply by pressing a button!

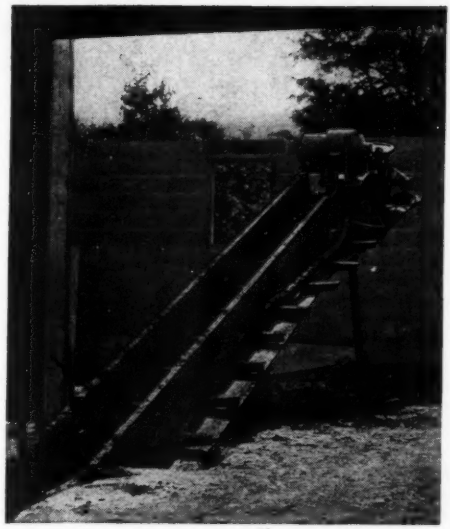
From the above nd many other interviews, certain advantages of electric barn cleaning were brought out by farmers themselves on the basis of their experience.

A recent survey gives a pretty fair picture of just how farmers regard their equipment.

What 650 Farmers Had to Say

Thirteen Barn Cleaner manufacturers in cooperation with the Barn Equipment Association made a study comprising the use of barn cleaners by 650 farmers. These farmers are located in all sections of the country. Therefore, every type of cleaner used under practically all conditions was reported.

The following is a summary of the results of this extensive study. This information should interest you—whether you are now using a barn cleaner or can use one.



Many farmers build sheds to house their spreaders. Besides keeping them out of the weather during winter months, these sheds provide additional room for other tools and equipment. When roofed, this one will be a valuable addition.

No. farmers surveyed (10 to 100 cows)	650*
No. of Grade A milk producers	382
Average size of herd	34.1
Percent who thought a barn cleaner was a good investment	96.9
Average time required to clean gutters before a barn cleaner was installed	54.2 min.
Average time required after barn cleaners were installed	13.2 min.

Utilization of time saved	
Keeping more cows	193
Better care of herds	264
Outside work	94

Length of time cows were stabled per year		
158	farms	6 mos.
62	"	6½ mos.
217	"	7 mos.
45	"	7½ mos.
70	"	8 mos.
40	"	more than 8 mos.

Methods used to handle manure before barn cleaner was installed.	
Litter carriers	236
Direct from gutter to manure spreader	232
Wheelbarrows	135
Manual from gutter out of barn	45

Sanitary conditions improved.	
Percent that cleaned twice daily before installing cleaner	28
Percent that cleaned twice daily after installing barn cleaner	35

Barn cleaner installation made by:	
The Farmers	267
Dealers	149
Contractors	118
Factory representatives	21
Combination of 2 or more of above	95

(More on page 33)

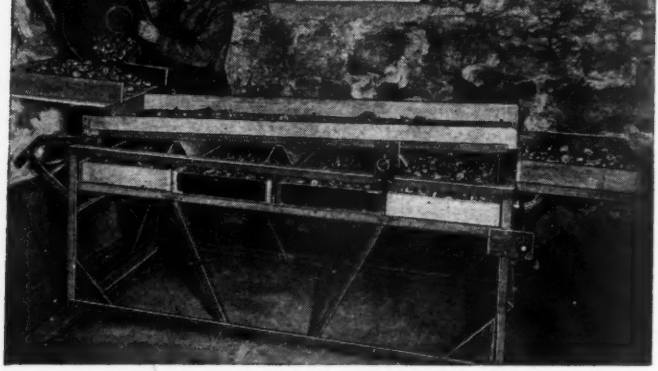
On the McLean farm he cleaner goes up a wooden chute that s enclosed by concrete on both sides. The opening required n the wall is reduced by guiding the chain flights back into the barn in a folded position. As seen at the right, they drop into position before starting back through the gutter.

Home-Made Grader Sorts Bulbs

By **DONALD COOK** and **WILLIAM BUCHINGER**†

Seventy five acres of gladioli is a beautiful sight. It's also a lot of work. However, Clarence Sheely of Monroe County, Michigan, uses machines to simplify the work of tending to the gladiola bulbs as much as possible. He harvests the bulbs from the fields by machine and, with an electric ventilation system, he thoroughly and quickly dries them. But, up until recently, the task of cleaning the easily damaged bulbs has remained a laborious hand job.

Commercial graders are available but they are big, heavy units that require special footings. What's more Mr. Sheely found them too bulky to allow him to install one in his base-



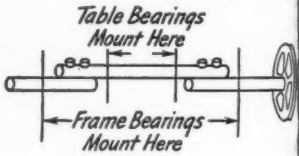
Here is Mr. Sheely's grader. The bulbs travel from left to right and drop, by size into any one of five trays. The smallest are at the left and jumbos come off end at right. The wooden trays are slid out when full. Pivot arms are at left. Note table crank shaft bearings (above 3rd tray) and jack shaft bearing on base at right. Motor can be seen below jumbo tray at right.

ment without tearing out part of the building. What he wanted was a light-weight grader that was easily portable. It seemed that there should be some way of modifying one of the existing graders so that it would suit his purposes. So, he got in touch with the farm service advisor from his electric power supplier.

The two men studied existing graders but found out that, from a cost standpoint, it would be impractical to try to modify the equipment available to them. So, they started planning from scratch with just the four fibre sizing screens that were required. They also enlisted the aid of the farm service engineer for the power supplier. As a result, an entirely new grader, weighing only 300 pounds was developed. It was portable, relatively small, and cost about three hundred dollars to build. The finished grader has handled one season's crop of bulbs, at the rate of about 60 bushels per hour, and shows no appreciable signs of wear.

The bulb grader is a unit about 9 feet long, standing 44 inches high and having a width of a little over two feet. It consists of a welded metal base constructed of angle iron. This supports the vibrating grading table. The grading table is 66" long and 19" wide with its feeding end supported by two metal arms which form a pivot so that the table may be vibrated. The other end of the grading table is supported by a crank which is driven by a ¼ HP motor. The grading is accomplished by the use of four fibre screens, the first of which has holes ¾ of an inch in diameter. The second screen has 1 inch holes, the next, 1¼ inch holes and the last screen, 2 inch holes. The end of the grading table, which is supported by the pivot, is approximately 2¼ inches lower than the other end of the table where the jumbo bulbs drop off.

The crank which causes the table to vibrate, is made of a piece of ⅞ inch shaft stock with two shorter pieces of the same stock bolted to one side of the shaft at each end. This gives a throw of 1¾ inches to the table. The crank was bolted together, rather than welded, to simplify installation and possible replacement of bearings. The center part of the shaft is attached to the table with 2 corn picker bearings and the ends of the crank shaft are supported on the base unit by two other corn picker bearings. One end of the crank shaft extends through the bearing sufficiently to allow a Vee pulley to be attached to it. This is turned at a speed of 140 RPM. The double speed reduction is



The crank is made of three pieces of ⅞" shafting. The shorter end pieces are bolted on to simplify the assembly. If the bearings require removal or repair, they may be easily detached after removing the crankshaft bolts. One end piece must be long enough so that it extends through the bearing sufficiently to allow the pulley to be attached.

†Mr. Cook is a Farm Service Advisor, and Mr. Buchinger is Farm Service Engineer, Detroit Edison Co., Detroit, Michigan.

complished by first belting the otor to a jack shaft and getting e second reduction by driving m the jack shaft pulley to the ank pulley. When the crank ms, the grading table moves and down and forward and ck. As the grading table has slight pitch to it, the bulbs ve slowly along from the ding end. The various sizes op through the proper screen they move along the table.

Grading Screens Rubberized

The grading screens are made quarter inch "Masonite," a rd fibre board. The two reens with the larger holes, " and 2", have had a rubber- d coating applied to the sur- e. Although the bulbs are aned to remove roots, dirt, d loose leaves, a small amount fine sand adheres to them. In ite of this abrasive material, e grader, including screens d bearings, shows little or no ar.

The pivot arms, which sup- rt the table, are attached to a aft which is supported by a rresponding pair of pivot ms. These in turn are attached the base by a second shaft. is gives two pivot points to ow both vertical and horizon- movement of the table. The ble pivot arms curve down- rd and the base pivot arms rve upward. There are three justment holes in each pair of ms. By shifting the pivot shaft om one set of holes to the next e amount of motion given to e grading table can be varied. esently, the shaft is used in e holes nearest to the table. is gives the greatest amount motion obtainable.

Mr. Sheely is very well eased with his new machine. though it was designed for use gladioli, it should be adapt- le for grading other types of lbs, including onions.

Did You Know

That Lincoln's Gettysburg ad- ess contains 266 words: The en Commandments contain 297 rds; The Declaration of Inde- endence contains 300 words d OPS's order to reduce the ice of cabbage contains 26,911 rds.

"SAVES TIME AND MONEY"
From left to right: Mr. Isaac Shakarian and his son, Demos, owners and operators of the Reliance Dairy, Downey, Cal.

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Mr. Isaac Shakarian and his son, Mr. Demos Shakarian, owners and operators of the Reliance Dairy Farm at Downey, Calif., use the De Laval Model F Combine Milking System to milk their 1,000-cow herd. We'll let their letter speak for itself:

"I have always believed in giving credit where credit is due—and your company certainly deserves credit for saving me a lot of time and money with the new De Laval Model F Combine Milking System.

"We are saving labor since switching to De Laval. This is a substantial item in itself; but coupled with this is the satisfaction of a more efficient, modern operation.

"We operate a 1,000-cow dairy and efficiency is important. Thanks to a fine job of installation by your dealer, Brown Brothers of Bellflower, we are now able to machine-milk 120 head of cows that previously had to be milked by hand, thus our operators are now freed of drudgery chores and can handle 75 cows each with ease.

"Our veterinary bill has shown a big reduction, and the sanitary problem is greatly simplified due to the new circulating washup system incorporated in the De Laval installation."

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Electric Motor On Hydraulic Press

With a hydraulic press hooked up so an electric motor operates the hand pump, the old coal-fired forge has been moved outside and forgotten at the farm shop on the Harold Barnett ranch, near Pendleton, Oregon.

Before the hydraulic press was installed, pulling parts on farm machinery, in the shop for repair or overhaul, often meant heating steel in a forge and then hammering away with a sledge hammer. This was hard work and it took the life out of implement parts. And, when the heat treatment didn't get results, it meant a special trip to a machine shop in town to get the job done.

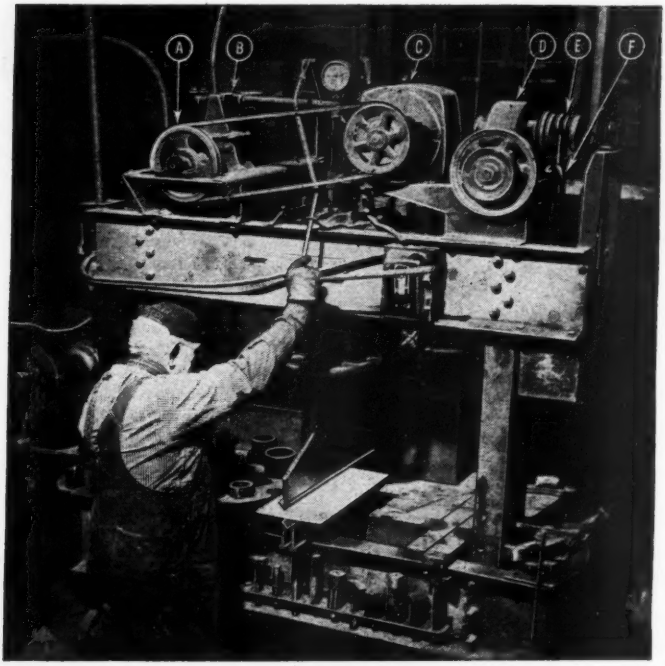
"But working the hand pump that came with the hydraulic press was hard work, and it was too slow," says Barnett. "That is why we figured out a way to do the job with a 1½-horsepower electric motor.

"First we rigged up a way to develop high pressure needed for heavy jobs. We did this by putting a 30-to-1 reduction gear between the 1750 rpm electric motor and a section of crankshaft from a Model A Ford, then we hooked a connecting rod from the crankshaft to the piston on the hydraulic pump.

"But we found the crankshaft outfit, which was capable of developing up to 60 tons pressure in the hydraulic line, was too slow for lighter jobs like shaping angle iron. So, we put on an auxiliary outfit on the other side of the electric motor. This auxiliary outfit, which puts up to 12 tons pressure in the hydraulic line, uses the transmission out of the same old car from which we got the crankshaft. The car transmission takes the drive from the electric motor to a hydraulic lift unit, borrowed from an old tractor, and connected to the line of the hydraulic press."

Photo shows hydraulic pr with the electric motor oper ing the low pressure pum Changing the belt drive from t motor, to the pulley wheel on t right, puts the high pressu pump in operation.

Barnett says this electr motor-driven hydraulic press the handiest piece of equipme in the farm shop.



This is the hydraulic press that replaced the forge in the shop on Harold Barnett's ranch. The faster, low pressure, pump is in use. Pulley A is attached to old car transmission that drives a hydraulic lift B. Motor C provides the power for a 12 ton pressure. For heavy work, motor is belted to pulley on speed reduction (30 to 1) unit D. This turns crankshaft E which, through connecting rod F, operates the hydraulic pump piston to produce a pressure of 60 tons.

OUR COVER STORY

Aerial Tram Serves Dair

By **Herbert Jonas**

What would you do, if y were faced with the cho of packing 1,000 pounds of mi 130 feet up a hill every day the year?

This was the problem at t Scudder Ranch Dairy, ne Yakima, Wash., until an elect motor and a home-made co veyor system took over the jo

Operating on a track ma from welded sections of 1¼-in pipe, supported by stub lengt of salvaged power poles, th unique conveyor system at t Scudder farm hauls heavy ca of milk from the milking ba uphill to the milkhouse, a brings back sterilized cans a milking machine equipment the return trip.

The conveyor car has whee of metal-faced plywood shap around hub and spindle asse blies taken from the front e of an old automobile. Pow for the conveyor system is su plied by a one-quarter-hors power electric motor, connect by belt drive to a reduction ge box taken from an old dai pasteurizer. This turns a 1 inch drum which winds and u winds cable hooked to the co veyor car.

The conveyor system is co trolled from either end of th track. A double set of 120-vo circuits, with two-way switch at both the milk house and th milking barn, drive the moto forward to pull the load up th hill—reverse the motor to u wind cable as gravity takes th conveyor car back down the hil

An alarm circuit, operated b push buttons, sounds a buzz

both the milking parlor and e milk house when the con-yor starts a trip. When a trip completed, the conveyor car kes a bumper switch—at the lking barn, or under the shed tside the milk house where e electric motor is located—ms off electric current and ps the conveyor.

ewiring That Paid for Itself

Putting in central pole distribution system with No. copper wire running in one rection to the house—and in e other direction to the barn d farm shop—sure has paid g dividends to me," says Har-n Fairbanks, Route 5, Yakima, ash.

"In addition to farming 40 res of irrigated land, I keep sy doing custom welding and pairs for farmers in the Ahta-m valley. As more folks got coming to me for repair work order to have a trip to town—needed more electric power ols, even though I operate only part time repair business.

"Our old wiring set-up was ver intended for heavy use of ectricity, so it wasn't long be-re my electric motors weren't nning right, and they were be-nning to heat up. In the win-r, when daylight hours were

e new central pole distribution point Harlan Fairbanks farm in Yakima, ashington. Three No. 6 wires run to e barn and farm shop. Another set ns to the house. Mr. Fairbanks says ey've made plenty of difference in s electric service.

Step up Milk Production with Jamesway

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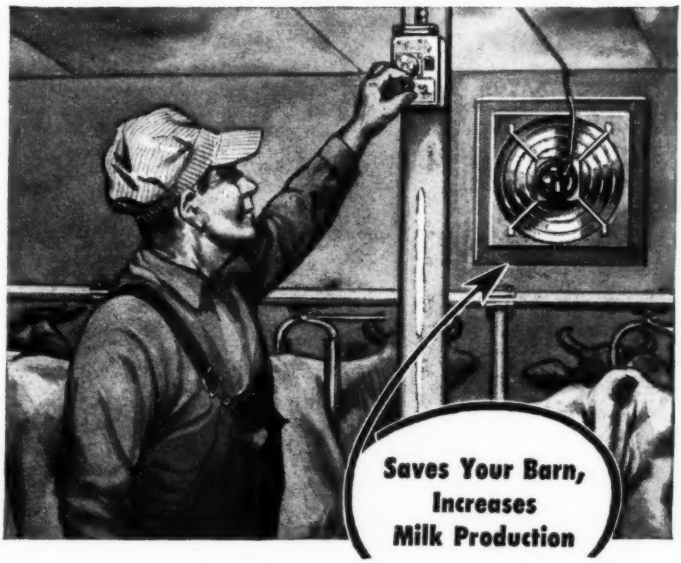

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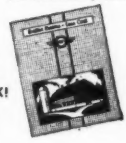

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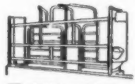

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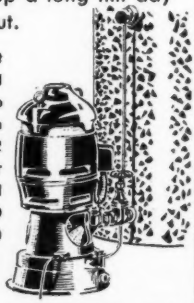

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short and we used more electricity, the trouble got worse. That's when I called up the power company people and told them I needed help.

"A voltage check showed there was plenty of electricity out where my service wires came off the power line transformer. The bottleneck was in my own wiring.

"The power company people recommended a central pole distribution set-up along with heavier wiring, and that is what I put in.

"Now, the service wires from the power line come to a pole centrally located in our farm yard. Three wires branch off to the house to run my wife's new range and electric water heater, along with the rest of the household appliances and lights. Three more wires branch from the pole to the barn and shop to supply 240-volt and 120-volt service for lights, welder and power tools. I have a total of about 10 horsepower in electric motors to run drills, grinders, hoist, electric power hacksaw, blower and compressor.

"Larger wire size, together with shorter leads from the central distribution pole, have sure made plenty of difference in our electric service.

"It cost around $300 to modernize our farmstead wiring, but it was worth every cent. I figure on making it back in a few months with the power tools in my farm shop."

Planned Wiring is Worth Money

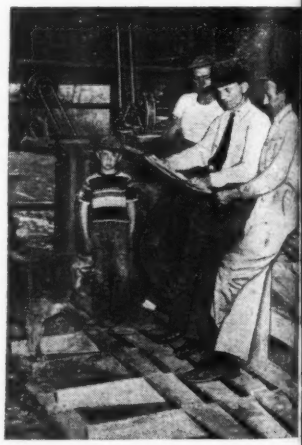
By F. L. BOCOCK

Mr. F. D. Snapp owns and operates a 112 acre Grade A dairy farm in Burkes Garden, Virginia. He bought his farm in 1943 at which time he started selling grade C milk. In 1946 he began selling grade A milk and at the present time, is milking 25 cows. Mr. Snapp is convinced that better wiring will pay for itself. Here is his own experience.

"When I bought this farm, it was already wired for electricity, or at least it was partly wired. We didn't have much electrical equipment when we moved here, just lights and small household appliances, refrigerator, electric iron, washing machine and an electric separator. The residence had a 3-wire service and a 60-ampere entrance switch. A 110 volt line was run out to the barn 800 feet away for lights. When we changed to grade A milk, I ran the third wire out to the barn so I could operate my electric water heater and dairy refrigerator.

Hay Dryer Prompts Wiring Analysis

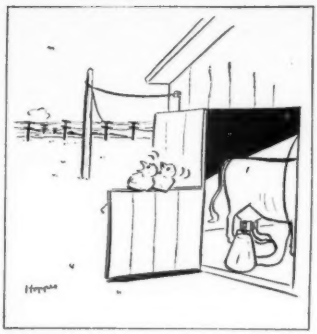
"It was last fall I found out I would have to do something about my wiring. That was the time I decided to install an electric hay dryer. I talked it over with my county agent and he referred me to Forrest L. Bocock, Agricultural Engineer for the Appalachian Electric Power Company, for assistance. Mr. Bocock came to my farm; and after talking over the hay dryer with him, I decided to put it in. He told



When a hay finishing system was installed on the Snapp farm, a rewiring job had to be planned. This rump session was held on the main air duct of the finisher. Left to right are Phillip and Dulaney Snapp, Jr., F. L. Bocock, and F. D. Snapp. Shep the dog seems to be interested, too. In the background you can see the hay hoist and the motor which drives the hay finishing fan.

ne that I would have to change ny wiring if I installed the hay ryer but that changing my wir- ng would improve the operation f my other electrical equipment. He furnished me plans for the nstallation of my hay dryer and complete set of plans for re- nodeling my outside wiring. The iring plans involved moving he meter from the residence to centrally located pole between he residence and the barn. Mr. Bocock said the pole meter hould be placed as near the lectrical load center as possible. The power company changed he location of their transformer nd meter to correspond to the lans furnished me, and I com- leted my outside wiring last anuary.

"I didn't know wiring could make so much difference in the peration of my electrical equip- ment. Before re-wiring I noticed he lights in my residence would dim down when the motors started. They don't do that any more. My electric water heater n the milk house was always low in heating the water, and ometimes it wouldn't supply



"Miles and miles of intricate wiring, and for Why?—Just to milk this darned cow!"

enough hot water. I was blaming the water heater; now I know I should have been blaming the wiring, because since re-wiring, it furnishes an ample supply of hot water. The cow clippers work better, too. After re-wiring, the lights in my dairy barn were so much brighter it looked like I had put in larger bulbs. Of course my greatest improvement was noticed at the barn as this was the critical spot, but the service has also been better at my residence.

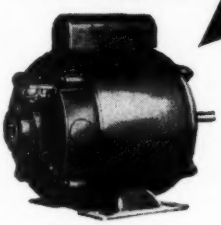
"From my experience with operating electrical equipment both before and after re-wiring, I would advise anyone to sit down with paper and pencil and figure out what electrical equipment he plans to use, not only for the present but also the future, and plan his wiring to take care of it. Get all the facts, and plan your wiring accordingly. I had no idea rewiring my place would improve the operation of my electrical equipment as much as it did. In my opinion, a good wiring job will soon pay for itself not only in the increased efficiency of the equipment but also in a lower electric bill."

X-Rayed Timber

The X-Ray can now be used to find defects involved in heavy timbers which are hidden from the naked eye by the bark and outer wood. Once these defects are located the saw mill operator can use the log to the best advantage.

Century Electric Motor Power Helps Make Farm Life Easier

ype RS—Repulsion start duction, single phase, sh lifting motor — for plications requiring high rting torque with low rting current. Built in es ½ to 20 horsepower.



ype CSH — Capacitor rt induction, single phase otor — for high starting rque with normal starting rrent. Built in sizes from to 20 horsepower.

ype SP—Split phase in- uction single phase motor for light starting duty. uilt in ⅙, ¼, ⅓ horse- wer sizes.

CE-661

Hundreds of thousands of Century single phase motors are helping farm families do more work in less time with less human energy. Then, too, electrically powered equipment usually does the job better.

Century motor powered equipment—keeps water ready at the faucet, in the house, barn and feed lot; pumps milk; shells grain; turns tool grinders and workshop machines; operates hay and grain dryers; and takes the hard labor out of dozens of other farm jobs.

For dependable electric motor power insist on Century motors —on new equipment and for replacement. Century motors are available single phase, three phase and direct current up to 400 horsepower.

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Century C MOTORS

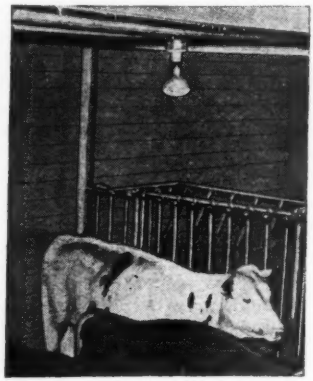
Winter Sunlight for Dairy Calves

By **DALE BOWER**†

Natural surroundings provide the ideal environment for the growth of any animal. When we confine dairy calves and cows in barns, some of the advantages of their natural outdoor habitat are taken away. One of these is sunlight, which contains the beneficial ultra violet rays.

These rays are useful in the manufacture of vitamin D in the animal's body. Vitamin D is necessary for the assimilation of minerals which go to make up bone and other tissues of the body. A lack of vitamin D may cause rickets or faulty bone formation in the growing animal. Vitamin D is absolutely essential for the proper growth of all young animals.

†Mr. Dale Bower is Farm representative, Cumberland District, Pennsylvania Power & Light Co. Carlisle, Pa.



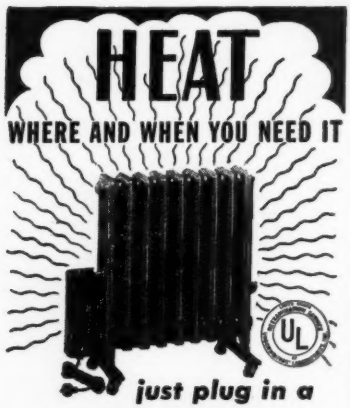
One of the two type RS sun lamps which were installed to flood Mr. Miller's calf pen with artificial sunlight.

When a dairyman confines his herd in the barn during the winter months he eliminates the exposure to these ultra violet rays provided by "Old Sol" as they do not penetrate ordinary window glass. Therefore, the animal does not receive the Vitamin D benefits of sunlight and the dairyman must correct this deficiency by supplying Vitamin D to his herd in some other way.

Mr. Merle Miller, R.D. #3, Carlisle, Pa., uses RS type sun lamps on his calves to add the necessary vitamin D. When the calves were four to five months old, the lamps were installed in the calf pen at a distance of about four or five feet above their backs. At this distance, two lamps flooded an entire 10′ x 12′ pen with light. The lamps were operated approximately one hour each evening. Mr. Miller believes that if the lamps were located about two to three feet above the calves, the time of exposure could be shortened to perhaps thirty (30) minutes. At this distance, more lamps would be necessary to cover the entire pen. Full coverage of the pen guarantees adequate exposure for each animal.

As to results, those observed were excellent. The five exposed calves had a very lustrous coat of hair. They were an alert, healthy looking group of calves which Mr. Miller says will develop into high-producing cows. No colds or physical set-backs developed and he states that the rate of growth was equal to or perhaps better than that of any calves he has ever raised. He has found the use of cod liver oil and vitamin pills in the calves ration unnecessary and discontinued this use in favor of sunlamps. This a saving is made on feed cost.

In regard to the value of the sunlamp, Mr. Miller makes the following statements. "The use of the sunlamps on the calves has proven highly satisfactory. The calves were as healthy as any group we raised at the farm. I consider the money spent for the lamps a sound investment which will pay dividends in the development of healthy, high-producing dairy cows."



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New Washer for Milking Machine

. . . . . (Here from page

the milking machine is being cleaned. What's more, they say that the milker washer gets out every bit of soil; there are no accumulations of milkstone in hard to reach places.

"When we disassemble and inspect our milking machines we find that they are perfectly clean", Bruno Shinsky said.

He attributes the effectiveness of the milker washer to the fact that its action so closely resembles that of the milking operation itself. A simple device, consisting essentially of a glass jar containing two metal tubes, the milker washer utilizes the vacuum, already available, to suck up the cleaning solution through the inflator assembly and then discharge it back into a pail. This action, repeated 18 to 20 times a minute, flexes the inflators during cleaning and rinsing to insure thorough penetration of the solution.

Less than two gallons of solution are required and may be re-used for cleaning the rest of the pails, gaskets and heads.

. The TELEPHONE is QUITE a wonderful piece of equipment. But DO you realize that it STARTED out with its BACK against the WALL, then developed to a point where it could STAND UPRIGHT—but NOW has to REST in a CRADLE! . . . . OLD-SAW-WITH-NEW-TEETH DEPT. (Apologies to Bobby BURNS): "Oh, WOULD some power the gift to gie us to see SOME folks BEFORE they see US." . . . . INCOME TAX is REALLY a game of HIDE and SEEK. The income tax collector is out to SEEK your HIDE . . . . There's an age-old saying that insists that what a man DOESN'T know DOESN'T hurt him, but in these days of keen competition in business what a man DOESN'T know DOES hurt him . . . . RACKETEER VERSION: "A SNITCH in time saves NINE." . . . . SODDEN THOUGHT: MOSQUITOS put MORE clothes on people than MODESTY does . . . . AN OLD MAID is a girl who is so particular that she is AN OLD MAID . . . . MIDDLE AGE: when a NIGHT OUT is followed by a DAY IN . . . . DOLLAR SIGN: a capital S that has been DOUBLE-CROSSED . . . . OVERHEARD: "And how did you like those back scratchers I sent you from New York?" "Back scratchers! Good heavens, my wife has been using them to serve salad." . . . . Much as we hate to admit it, MOST men develop into pretty good husbands IN SPITE of the material their wives have to work with . . . . OPTIMIST: a fellow who lights a match BEFORE asking you for a cigarette . . . . TOUPEE: a TOP secret . . . . With all our problems of SOIL EROSION it's pretty difficult to keep the farm down on the farm . . . . DIVORCE: a busted coupling . . . . EVERSTOPTOTHINK?—It's really not TOO difficult to live on a small income—so long as you don't spend TOO much TRYING to keep it a secret . . . . SAFETY-SLOGAN-OF-THE-MONTH: "If you wear torn and loose clothing around machinery, you are REALLY dressed FIT TO KILL." . . . . "Well, THAT misery is over." "What misery, pal?" "Dancing with the hostess. Have YOU been through it yet?" "Don't have to. I'M the HOST." . . . . BACHELOR: a fellow who never QUITE gets over the idea that he is a thing of beauty and a BOY forever . . . . Your pun peddler—DUFFY.

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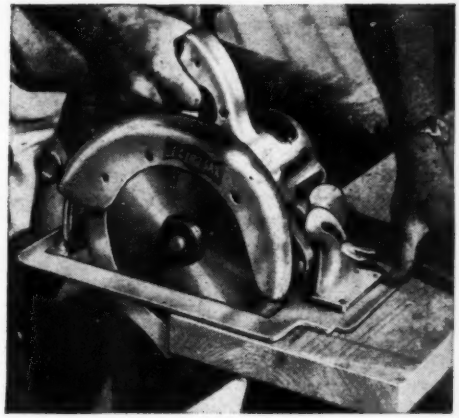
Professional Saws at Popular Prices!



10 times faster than hand sawing!

BLACK & DECKER LECTRO-SAWS save you so much time, money and materials that they pay for themselves in a few jobs—and go on giving you extra-long years of usefulness because of the real quality Black & Decker builds into them . . . dependable motor, full-size ball bearings, high-quality helical gearing, hardened armature shaft, husky housings! Just look at their *professional* features listed below—check those unbelievably *low prices*—then go try one at your hardware, electrical or building supply dealer! THE BLACK & DECKER MFG. CO., Dept. H11G, Towson 4, Md.

ABUNDANT POWER! Motors built by Black & Decker specifically for tough power sawing.

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Electrical Housekeeping

Edited by NAN SHAW . 329 Memorial Union, Ames, Iowa

Plan a Kitchen to Work For You

Your kitchen is your work center and the heart of your home. You're likely to spend more hours there than in any other part of the house. So plan it for your convenience. Even an old kitchen can be rearranged to cut down walking and lifting, stretching and stooping. Plan your hours in the kitchen to be pleasant hours.

And remember the family. At the very beginning it's important to get everyone's cooperation. Have everyone list what he thinks should be a part of the kitchen. Decide together whether most of the meals throughout the year are to be eaten in the kitchen. Will the laundry, food preservation, and business records be done in the kitchen? Then what about a corner with an easy chair for reading and listening to radio market reports?

Seldom can all of your ideas be used in remodeling. Compromises are to be expected, but the final kitchen plan will be influenced by your family's ideas.

Just buying and moving modern equipment into your kitchen does not assure you of saving time, steps, and energy. Look at the "before" plan of the Leigh Currans' kitchen. The Currans' farm is on Route 3 near Mason City, Iowa. Every time a meal or snack was prepared, Mrs. Curran started a walking marathon. You couldn't ask for better equipment, but you certainly could ask for a better arrangement.

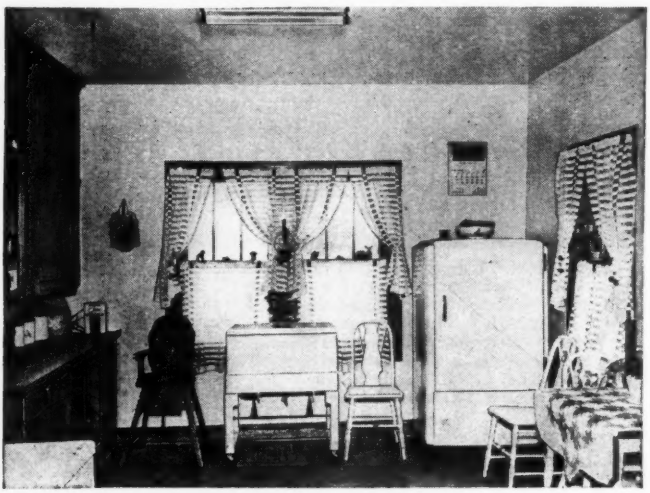
Careful Planning Avoids Compromise

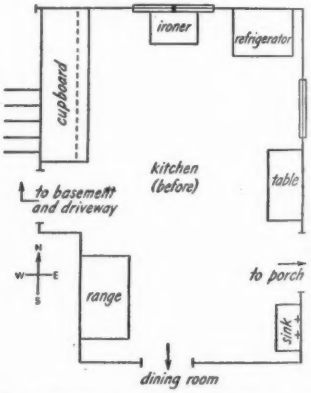
That's exactly what Mrs. Curran did. She knew she was using too much energy in doing her kitchen work so she studied kitchen pictures, extension bulletins, and consulted with her home demonstration agent and local power supplier office. A lot of time was spent in working out a plan which would have the fewest compromises.

No major structural changes were required. The windows were shortened and the kind used which slide from side to side and are lifted out for cleaning.

Then the old back breaker of a sink, tucked into the corner, was eliminated. The new dishwasher sink is under the window where Mrs. Curran can see the barns and driveway, as well as down the road. You can see that to either side of that sink is plenty of counter and storage space. The mixing and range centers also have good work counter-storage spaces.

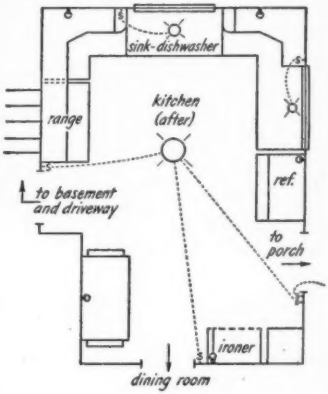
This kitchen is used to cook for ten more frequently than just the Curran family of six. And since Mrs. Curran does a good deal of the office work for their farm, the conveniently arranged kitchen has saved her many miles as well as hours of kitchen time. It is also part of the answer to how she can keep on as the leader of the 4-H club in her community. This year, with a clothing project, she had her own electric machine with





Mrs. Curran's kitchen was a good sized room with plenty of wall space and with good windows to provide both light and cross ventilation. And she had excellent equipment. However, the arrangement was such that meal preparation was a regular marathon. Here's the way it looked before it was remodeled.

Except for shortening the windows over the relocated sink, the Currans made no structural changes in their kitchen. But what a difference can be seen here. Now there is plenty of storage space at all work centers and their U-shaped arrangement eliminates unnecessary steps. Wall switches control the ceiling light so that it may be turned on or off from any doorway. With the dishwasher sink located under the windows, Mrs. Curran now has a pleasant view of the barns and driveway as she goes about her work.



six others all going at one time in the dining room without causing any inconvenience.

The three daughters are fast taking their turns at the dishes. The oldest one, Kay, in her first year of 4-H work, is supervisor of the dishwasher for supper and vacation meals. Cooking and dishwashing done in this organized kitchen have become a part of pleasant everyday living rather than distasteful chores.

New Flooring Saves Work

Another item which has saved time is the inlaid linoleum floor covering. Before, the floor was hardwood which had to be scrubbed at least twice a week! Now the floor gets dry mopping most of the time, with occasional waxings.

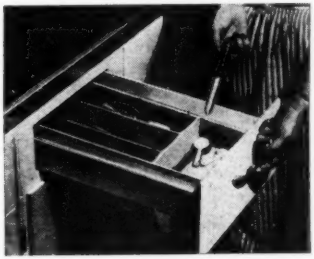
This remodeled kitchen with all metal cabinets has been used for three years now. The doors and drawers work easily and there has been no discoloration of the paint. The switch-controlled lights in the dropped ceiling over both windows provide good light on cloudy days. Then whenever needed a light can be turned on under each wall cabinet. This is particularly helpful over the range and in the corners. The U shaped arrangement has eliminated unnecessary traffic through the work centers.

In planning kitchen improvements, first get the exact measurements of the kitchen. Use a long running tape so as to avoid errors. Draw a plan of your kitchen to scale on paper, allowing ¼ to ½ inch to the foot. Indicate windows, doors, pipes, room heating system, chimney, wiring, switches, convenience outlets and lights. Next make a rough sketch of your first-floor plan, so you can see how the kitchen fits into the rest of the house.

Make changes with pencil and eraser rather than push heavy furniture about. It's easier to talk with carpenters and supply dealers, too, when they have your scaled plan drawing in hand.

As you look at your paper plan, what possible improvements do you see? Here are some suggestions:

1. Rearrange your present equipment to make convenient centers for preparing meals. Try to shorten distances from work table to range or from dishwashing center to dish cupboard. Raise or lower counter heights.



File dividers in drawer keep small equipment whole, free from dents, and at finger tip reach.

If you bake bread, pies, and cakes in quantity, you'll like this drawer with swivel casters. It will hold 50 pounds of flour. Note the lower mixing counter height. Just right for the homemaker!

Change the way you have things stored to reduce stooping, lifting and bending. A rearrangement plan is most important when one is renting, or cannot buy new equipment or large

amounts of building materials.

2. Close up unnecessary doors. Two doors—an outside door and a door into the rest of the house—are all that are really necessary. Doors located along one side or at a corner of the room are best. Shorten the long windows so as to have unbroken wall space for kitchen furnishings. Your window area should be about one-fifth of the floor area.

3. Plan so your family and visitors go around rather than through your kitchen work centers. Don't hesitate to bring equipment out from the walls.

4. Try moving the present kitchen to another first-floor room to see if you can get wall space for work areas and also get double views over the driveway and farm court. If you retain a dining room keep it next to the kitchen.

Today it is smart to sit and save your energy while you work. A lapboard and a comfortable chair in the kitchen make it possible to alternately stand and sit while you are working in the kitchen.

5. Look for spots where you can add new storage space, work counters and equipment. Choose them to fit your family's needs and to add to other equipment.

6. Reduce the size of the room with a peninsula or island work counter, or a 3- to 5-foot-high partition. This will divide your kitchen working space from your eating and resting spaces.

7. Remove partitions or rebuild the present room. Such changes, especially with load-bearing partitions, cost money and need careful planning with help from a competent carpenter.

8. Let the kitchen be a new addition to the old house.

9. If you're building a new house, study the floor plans for any changes you want. Then have the carpenter or architect make them on the blueprints before the foundation gets under way.

Kitchen Conveniences

Farm home kitchens are getting smaller since workrooms are being put on the first floor or in the basement. Even with laundry and many other jobs taken to the workroom, the kitchen can be not much less than 9 x 12 feet. If you wash or can in the kitchen the room must be at least 10 x 14 feet. Keep your kitchen large enough so it won't seem overcrowded and inconvenient.

Two outside walls are desirable for good natural lighting, cross ventilation, and views of outside farm activities. Locate windows and doors to give cross ventilation and to control traffic. A door transom and glass in the upper half of the door will provide cross ventilation and light. An electric exhaust fan installed to carry off steam, smoke, and odors is a great convenience.

Three different work counter heights surrounded with utensils and supplies make the kitchen work go faster. You get less tired, too. These three heights include a sit-down lap board; sink basin and mixing counter for your natural upright posture, which keeps the ear, shoulder, hip, and ankle in an almost perpendicular line; and counter tops at either side of range at range height for safety.

The greatest convenience you can have in your farm kitchen is a sink with running water and a drain.

Kitchen Wiring

Every kitchen needs adequate wiring for light and power. For good general lighting install a central ceiling fixture. An additional fixture over the sink, work counter, and eating table will prevent shadows, eyestrain, and fatigue. Lights under wall cabinets provide comfortable seeing at all times on counter tops. Shield all bulbs with globes, reflectors or shades to prevent glare.

Two and three way switches at door openings between elbow and shoulder height are easy to control. Locate the switches together on opposite sides of a partition, so you can darken the room you have just left as well as light the one you're going into. For greater safety have a wall switch, rather than a pull chain, for the light over the sink.

There will be at least five places where you'll want to use electric equipment in your kitchen: refrigerator, mixer, clock, eating table, range. Place outlets for your appliances above counter tops, and make sure the circuit they are on is not overloaded. For the most satisfaction, provide outlets on a special circuit, direct to the service box. This assures no overload interference at any time. A set-in clock outlet is the ideal way to hang an electric clock.

A drawer with metal liner and deep enough to store the daily bread supplies is another kitchen convenience.

Waffle Iron Note

If excess shortening has collected on the grids of your waffle baker, wipe them with a soft cloth or absorbent paper while the grids are still warm. The grids will darken slightly after continued use; this is normal, and not an indication that the grids must be washed.

• • •

When syrup is used with fruits in freezing, it should be cold to speed the freezing time.

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Famous Television Star

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New *SUPER-SPEED* COROX® UNIT GETS RED-HOT IN 30 SECONDS

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It heats piping hot soup for four, or brings fresh or frozen vegetables to steaming, or pan-fries bacon to luscious crispness . . . in only three minutes.

This unbelievably fast SUPER-SPEED COROX Unit is but one of the star features of the Westinghouse Commander *Speed-Electric* Range. It has a dozen more that you'll love.

Exclusive Color-Glance Controls that tell by color which unit is on and at what heat.

Exclusive Miracle Sealed Oven that bakes perfectly in any rack position. There's no shifting of hot racks.

Completely Automatic Cooking. The built-in Electric Timer cooks a complete oven meal even when you're not at home. Timer controls appliance outlet, too.

Go to your Westinghouse dealer for a demonstration of this new Commander and other great Westinghouse *Speed-Electric* Ranges. There are models for every family need and budget. The Westinghouse Electric Corporation, Mansfield, Ohio.

Look to WESTINGHOUSE for TV's Top Entertainment . . . Exclusive Telecasts of Outstanding COLLEGE FOOTBALL GAMES . . . plus WESTINGHOUSE "STUDIO ONE" every week

Only the Westinghouse *Speed-Electric* Range has the SUPER-SPEED COROX Unit

MIRACLE SEALED OVEN keeps *all* heat inside. Now you can bake in any rack position and be sure of perfect results every time.

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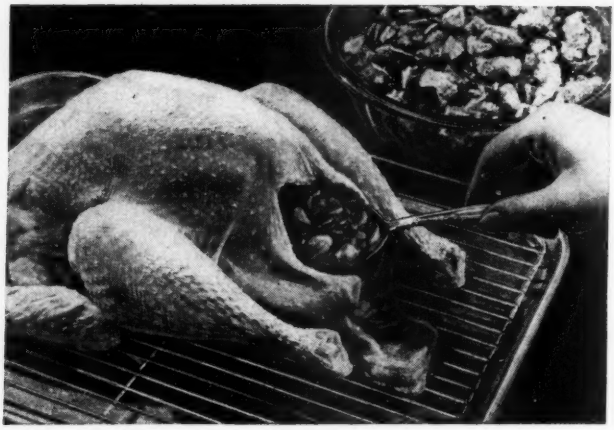


How nice it is that the Pilgrims picked the turkey for their Thanksgiving feast! It's not hard to think of things for which we should be thankful after polishing off a drum stick, or perhaps the second joint, carved from a sizable, succulent, stuffed turkey. And speaking of stuffing, don't be frugal with it. It's nearly as good as that second joint.

Stuffed Turkey—A Real Treat

Turkey with stuffing! It just wouldn't *be* Thanksgiving turkey with*out* stuffing, would it?

When you have your stuffing made, you feel that your dinner is really under way. It's a temptation to make it early, but how early may turkey be stuffed before roasting?

We know that stuffings made of bread or other starch food may become a medium for the growth of harmful organisms if the stuffing remains for some time in the incubation zone (50° to 120°), or if the stuffing is not heated to a high enough degree to destroy organisms.

Preliminary tests indicate these precautions in preparing a fresh or frozen turkey:

Keep the cleaned bird and the stuffing refrigerated until time for roasting; then stuff and roast.

After serving, remove the stuffing from the cavities and refrigerate both bird and stuffing.

Reheat only that portion of stuffing that is to be used.

Use the stuffing within four days.

Be sure to cook giblets, sausage, and other meats before adding these to the stuffing.

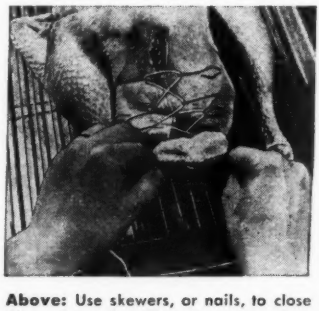
If meat broth is used in the stuffing, be sure the broth has been chilled and kept in the refrigerator not over 24 hours.

When roasting large turkeys (20 to 25 pounds ready-to-cook weight), it may prove more satisfactory to roast the unstuffed bird and bake the stuffing in a separate pan.

How To Stuff a Turkey

Sprinkle salt inside neck and body cavity. Make 1½ cups of stuffing for each pound of turkey (drawn weight) and stuff neck and main cavities. Push stuffing well up into rib section, but do not pack it too tightly, because, in cooking, steam may crack the skin or the lacing may give way as the stuffing expands.

Truss with skewers or use small nails to tuck neck skin back under turkey and to pull two edges of skin over dressing in main cavity. Loop middle of long piece of string around upper skewer at main cavity and cross string ends from one side to the other to form a close lacing, fastening string around turkey's tail to complete the closing. Twist tips of wings up and tuck them under upper part of wings close to turkey's back and tie leg bones together against body. Wings and legs get overbrown if they are left free. Then rub entire skin surface with melted fat and place bird on its back on rack in shallow roasting pan.



Above: Use skewers, or nails, to close the main cavity. Then lace the edges together by looping string around ends of skewers. **Right:** The bird should be covered with a clean cloth which has been dipped in melted fat. This will prevent the bird from drying out and becoming over-browned.

Then Roast

Insert meat thermometer between thigh and body of turkey and cover bird with clean cheesecloth which has been dipped in melted fat. This will prevent dryness or over-browning. With the constant temperature of an electric oven, you need not cover the pan or add water or turn the turkey during roasting.

For a 15 to 20 pound turkey, roast in your electric range oven at a constant temperature of 275° for 16 to 21 minutes per pound (drawn weight) until the meat thermometer reaches 185°. Basting is not necessary at low temperature because there is little loss of moisture in an electric oven. For a 10 to 15 pound turkey, raise oven temperature to 300° and roast 20 to 22 minutes

per pound. For a turkey under 10 pounds, roast at 325° for 20 to 25 minutes per pound.

The well-stuffed turkey will carve easier if removed from the oven 15 to 20 minutes before carving time. Keep it hot, though, and make gravy in the roasting pan.

If You Freeze Turkey

Do not stuff the bird before freezing. Salt in the cavity of the bird and in the stuffing increases the development of rancidity in the turkey. Stuffing inside the cavity of the bird considerably increases the bulk and hence is frozen or thawed last. During both the freezing and thawing periods the stuffing is held for a considerable period at temperatures ideal for the incubation of bacteria. If you wish to make the stuffing in advance, freeze it separately.

Cranberry Orange Relish

Children love to help with holiday preparations, so let them have a hand in making something that's fun and as simple as

Fluted orange serving cups add a festive appearance to the relish.

Cranberry Orange Relish. They can follow these five steps:

1. Wash 4 cups cranberries and 2 oranges.
2. Quarter the oranges without peeling.
3. Put all through food chopper. If you have a chopper attachment for your electric mixer, this is a simple task.
4. Add 2 cups sugar and mix well.
5. Chill in refrigerator a few

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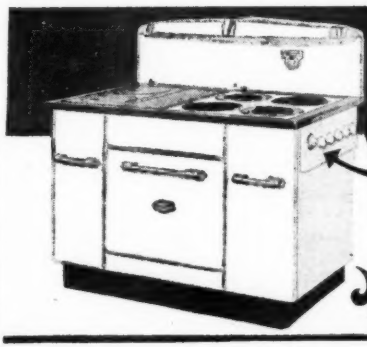

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"I have spent over $9,000.00 for medicine, hospital and doctor bills in the ten years I've had Undulant Fever. Few people really understand the chances they take with raw milk. It's best to play safe and buy a pasteurizer."—Mrs. G. R. Carlson, Milwaukie, Oregon.

BE SAFE—Pasteurize Milk at Home

Raw milk may also carry typhoid fever, scarlet fever, tuberculosis and strep throat. Give your family disease-free milk with the simplest, easiest, most economical home pasteurizer you can buy—the Home-Health Pasteurizer. You'll be sure of complete pasteurization. The milk will have no cooked taste. A handy automatic electric appliance for your kitchen. Laboratory tested and guaranteed. All aluminum. One gal. capacity. Accepted for advertising by American Medical Association. Ask your dealer or mail coupon for details.

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Please send free folder on milk-borne diseases and their prevention.

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hours before serving.

This crisp relish really improves with standing in the refrigerator.

It is a tangy accompaniment for the Thanksgiving bird. For such a special occasion, you may want to serve the relish in fluted orange cups. Make the cups by cutting orange to center with zig-zag strokes that meet in points. Separate the halves, remove pulp, fill with relish and arrange on a platter.

Church Services at Home

By **Marjorie Forbes**

Where there is *electricity*, there is a way," believe Mr. and Mrs. J. G. Andres who live in Elbing, Kansas, a small country town of some 65 population.

When Mrs. Andres became bedfast approximately a year ago. One of the things that distressed her most was being unable to attend the Sunday church services in the nearby Zion Mennonite Church.

The family is not one to give up easily. If Mrs. Andres could not go to the church services, then the services would be brought to her!

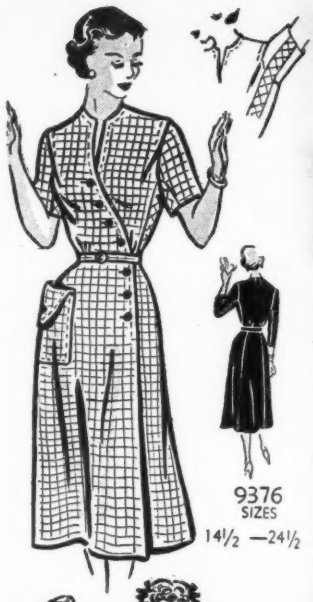
This past spring the church was equipped with a loud speaker system similar to that used in many city churches. This, in itself, was not extremely unusual, although the system has two novel but convenient features. First, a speaker in the basement for the nursery so that the youngsters being entertained there can also hear the services; and second, a remote control in the rear of the church so that the volume of the amplifier can be adjusted when necessary.

When this was being installed Mr. Andres purchased an additional loud speaker for the Andres home. The total cost for the speaker, 300 feet of wire, and labor was about $35.00. This loud speaker also has a volume control that can be adjusted as Mrs. Andres likes.

And once again Mrs. Andres can hear and enjoy the church services!

But this is not all.

Mrs. Andres is not alone in



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INSTALLED IN 15 MINUTES . . . MAKES STARTING EASIER . . . NO MORE DIMMING LIGHTS, BLOWN FUSES, OR BURNED-OUT WIRINGS

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If you operate water pumps, milking machines, crop driers, sprayers, corn shellers, elevators, or any equipment powered by an electric motor (or gasoline engine) find out how a Mercury Automatic Clutch will not only eliminate all fire hazards but also improve the performance of the equipment. Ask your dealer or write for Mercury Folder H-12

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Install on ANY farm water system. Ask your dealer, or write. . . .

WOODFORD HYDRANT CO.
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her enjoyment of the Sunday services. One might expect that a person who is partially paralyzed would be forced to give up the performance of neighborly deeds. Not so Mrs. Andres. A neighbor who has a serious heart ailment and can not stand the confusion of a crowd is invited each Sunday to come and sit and listen with Mrs. Andres during the church hour.

The loud speaker is not used during Sunday School but the group of women who make up the class Mrs. Andres attended quickly solved that problem by meeting for their lesson in the Andres living room.

This is an example of how ingenuity, the neighborly spirit of the midwest, and the use of electricity can be combined to bring additional happiness to a rural home and community.

New Publications

• AMERICA'S BABY BOOK. Prepared under the auspices of the New York Herald Tribune Home Institute by John C. Montgomery, M.D., and Margaret Jane Suydam. Scribner's, New York. $3.50. A thoroughgoing baby book, but, more than that, it features a Home Management Appendix and a Food Appendix, geared to the needs of children in the home. It suggests storage space for baby foods and equipment, kitchen arrangement, best use of kitchen equipment, short cuts in the laundry, time saving tricks in cooking and in housecleaning, and many labor saving tips for a busy mother.

• THE HAMILTON HOMEMAKER'S MANUAL. Hamilton Manufacturing Company, Two Rivers, Wisconsin. 50 cents. A collection of articles that have appeared in leading homemaking magazines. This book is designed to help in all phases of running a home successfully, from business-like bookkeeping to suggestions for easier ironing, sewing, housecleaning and entertaining.

• "GUIDE TO EASIER LIVING" by Mary and Russel Wright. Simon and Schuster, New York. $2.95. Two outstanding industrial designers combine a sprightly style and good common sense to solve the problems of planning lighting and furnishings, storage space, house cleaning, entertaining, and many others, with the least time and energy. Has many illustrations, charts, checklists.

Something New for Comfort, Convenience

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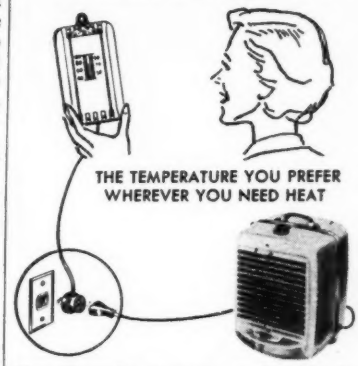

Now Chromalox gives you another first for better living with electric heat. This portable, Pin-up, Plug-in Thermostat and Chromalox Deluxe Heater give you a Chromalox quality-built combination that can't be beat for convenience, performance and price. Accurate control gives you dependable, steady heat for comfort in your home—or just enough heat to prevent freezing in the milkhouse. Just pin up, plug in for easy, modern electric heat.

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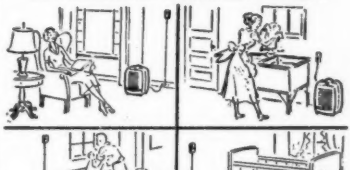

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CHROMALOX
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Hi!

You'll probably be eating some turkey this month. Although it seems a funny way of expressing our "thanks," it's traditional. And I'M all for it! Gosh, it tastes good!

Time was when that turkey was pretty independent. If you wanted one you had to go out and shoot it. Not so today! You'd probably have a hard time even finding a wild turkey now. What's more, it's much simpler to raise turkeys and keep them confined so that when we want one we don't have to go traipsing off. Of course, I'm not sure whether the turkeys like the idea, or not. They get all they can eat and drink, without too much work, as long as they live. Trouble is, they no longer have too much to say about how long they live. When someone started taking care of them they lost their independence.

Be that as it may, we'll eat our turkey, domestic or wild. And while we eat it we'll give thanks. Thanks that we live in America. Thanks for our heritage of freedom, independence, and the rights and dignity of the individual. And pledge ourselves to the goal of passing this heritage of ours on to succeeding generations.

Kenneth V Andrews

Make This Hay Feeder

An Inexpensive, Easily Built, Feed Saver

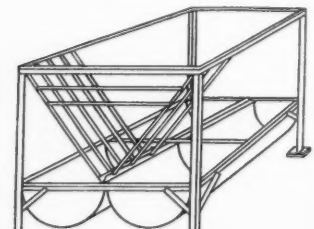
By ED OPDENHOFF†

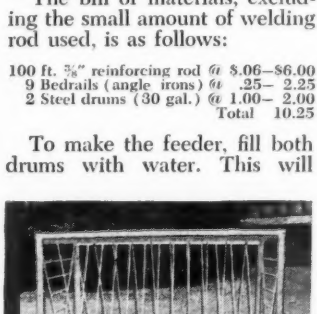
Raising calves is one of the most popular projects with Future Farmers and 4-H-ers. Many of the top herds to be found on farms today had just such a beginning. If you have such a project, the calf feeder shown here is one that you will like and one that you can easily build in your shop. It provides ten feet of feeding space, is portable, and saves the loose hay and leaves that normally are lost on the ground. This gives the calves the opportunity to clean up the leaves which contain the bulk of the protein found in hay.

The bill of materials, excluding the small amount of welding rod used, is as follows:

100 ft. ⅜" reinforcing rod	@	$.06—$6.00
9 Bedrails (angle irons)	@	.25— 2.25
2 Steel drums (30 gal.)	@	1.00— 2.00
	Total	10.25

To make the feeder, fill both drums with water. This will force any gas or oil fumes out. Then cut down the welded seam and across both ends of each drum. Also cut through the rib on the side of the drum opposite the first cut. Now you can bend the two halves back and open each drum up into a double feeding trough.





Above: This sketch shows the feeder during construction. The diagonal bars, forming the rick will continue on for the full length of the feeder. Horizontal end bars also will extend down to the bottom of the rick at both ends. **Right:** Here is a photograph of the finished calf feeder.

The next step is to weld the two double troughs, together, end to end. Then an angle iron frame is welded around the edge of the entire unit. Four 54" angle iron legs are then welded to the four corners of the feeder. These should be set to bring the top of the feeder about 18" above the ground. The corner joints are stiffened by welding short metal braces in place between each leg and the trough frame. An angle iron frame is then welded to the top of the four legs. This makes a good stiff structure.

Reinforcing Rods Form Hay Rack

The only thing remaining is the hay rack. This is made from the reinforcing rods. One piece of angle iron is welded to the center partition of the feed troughs. This provides a Vee in which the bottom of the rods rest. The top of each rod rests against the side of the top frame. Cut enough rods so that they may be spaced 4½" apart. When the rods are properly spaced, weld them in place, top and bottom. Then cut rods to be welded across each end of the rack. These also have 4½" spacing but are placed horizontally like the rungs of a ladder.

To give the feeder a finished appearance apply a coat of aluminum paint. A small flat piece of iron welded to the bottom of each leg, will keep the feeder from sinking into soft ground. All of the welding and cutting can be done with a regular farm welder. If you have need of a larger feeder, simply use more drums. You may also wish to use larger drums. If you use three or four drums, end to end, you will need to provide additional legs in the center of each side.

†Mr. Opdenhoff is a farmer from Kingfisher, Oklahoma. In the past we have shown other examples of his shop handiwork.

FFA Farm Electrification Awards

Russell Wall, 16 year old high school vocational agriculture senior at Drumm Institute, Independence, Mo., was this year's national winner of the Future Farmers of America Foundation's Farm Electrification Award. The $250 award was presented at the FFA 24th annual national convention. Three other Future Farmers received checks of $200 each as regional Farm Electrification winners. They are Johnny B. Eubanks, 18, Bristol, Fla.; Charles Bottom, 18, Route 1, Nelson, Pa., a member of the Addison, N. Y., FFA chapter; and Theodore Walker, 18, Route 3, Tremonton, Utah, member of the Tremonton - Garland FFA chapter at Bear River.

Drumm Institute, where Russell Wall receives his training in vocational agriculture, is a cooperative boys' institution where all the boys share in the ownership and operation of the 370-acre general livestock farm. They live on the farm the year-around, receive agricultural instruction and experience there, and are transported to school in Kansas City for other subjects of their high school curriculum. At the Institute, when a boy shows special interest and skill in a particular phase of the farm work, he is encouraged toward responsibility in that field. Russell was interested in electrical work, so was given the job of repair and construction of electrical appliances on the farm.

Winner Wall has built four electric pig brooders, one lamb brooder, two poultry water heaters, three baby chick brooders, eleven broiler batteries, a walk-in chill room and freezer unit for the slaughter house, an electrical display and shop board, and a pea huller. He has done considerable work in electrical wiring on the farm, including the installation of switches, lights and appliances; serviced and repaired many pieces of electrical equipment. He's now in the midst of wiring a Community Building presented recently to youth of the community.

Russell has been a member of the Drumm Institute FFA chapter three years and has held chapter offices of vice president and sentinel. He has lettered in football, basketball, baseball and track, and was named winner last year of the Drumm Award for excellence in citizenship, scholarship, youth activities and sports.

Johnny Eubanks of Bristol, Fla., winner of the Southern Region award, was graduated from Bristol High School last spring after four years of vocational agriculture study and membership in the FFA. His particular interest has been in connection with installing and maintaining rural telephone lines. He was employed in 1950 by the Forest Service to work on 25 miles of line and has a letter from District 2 Forest Service headquarters at Tallahassee which states, in part: "You have come a long way in clearing the lines of bad joints and leaks. Your work has given Liberty County one of the best magneto lines in our district."

Young Eubanks has done considerable electrical wiring work, including installations for a chicken house and brooder house on the farm, running lines to the pump house and installing the pump, wiring barn for electric lights, and installing 200 feet of electrical lines to light the FFA chapter park. His work in repair of electrical equipment includes a variety of motors, radios, switches, and automotive electrical circuits. His FFA projects, in addition to electrical work, includes 18 hogs, 16 acres of corn and one acre of truck crops.

Charles Bottum, North Atlantic Region FFA Farm Electrification winner, has built a 150-chick capacity brooder of the new type using infra-red bulbs; planned and installed electrical wiring for a 12 by 20 foot building used as temporary classroom for the high school vocational agriculture department; built a display panel for class instruc-

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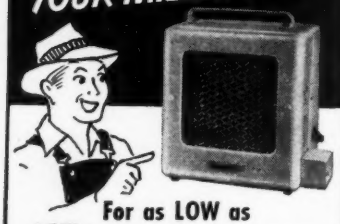

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CORN SHELLERS HAMMER-MILLS FEED MIXERS

tion showing proper uses of a variety of switches, wires, and connection appliances, and did the major share of electrical work to provide lighting for three community fairs. He has done considerable electrical work on the home farm, including the installation of a poultry fountain heater which, in conjunction with electric lights during winter months, has brought about a 50 percent increase in egg production. His work also includes repair of many electric motors and appliances.

Bottum's 1950 supervised farming program included 410 White Leghorn hens, 500 chicks, 4 acres of oats and 14 purebred Holstein cattle. He was graduated from Addison Central High School last spring, and is planning a partnership with his father, Henry Bottum, in the operation of the home farm.

Theodore Walker put his knowledge of electricity to work wiring homes and other farm buildings to win the Western Region FFA award in Farm Electrification. Ted was graduated last spring from the Bear River High School, is now attending Utah State Ag. College.

When Ted's father, Delbert S Walker, decided to build a new home in 1949 the Future Farmer and his younger brother pitched in to help so that the three were able to do almost all of the construction work. Ted did all the electrical wiring and performed such good work that a neighbor hired him to do the wiring for his new home. Young Walker built a sheep shed last fall, wired it for lights, and installed three lamb brooders. He has installed several electric appliances on the farm, repaired motors, and regularly maintains all the electrical equipment used. His supervised farming program last year consisted of nine Columbia ewe sheep, one and a fourth acres of alfalfa, and two acres of sugar beets.

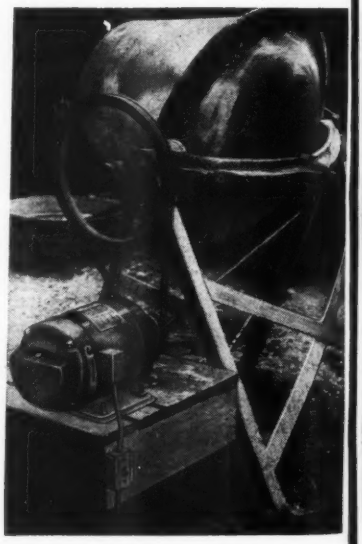
The Future Farmers of America Foundation which sponsors Farm Electrification and other awards for FFA members, receives its funds through contributions by business and industrial concerns, organizations and individuals. Each of the winners honored at the national convention already had received a $100 Foundation award as State winner in Farm Electrification.

Motorize Your Concrete Mixer

By LEE WETHERBY†

Concrete walks, foundations and feed lot floors are well within the abilities of farm mechanics. And with a farm-size concrete mixer most of the labor connected with their installation is eliminated. It's no wonder that more farmers are buying this kind of equipment.

These mixers are easily



This photograph shows the construction of the motor table and the way it is attached to the concrete mixer. Note the motor switch, the tub for holding cement supply and the tough rubber covered extension cord. The motor cover has been removed to show construction.

†Mr. Wetherby is Farm Service Advisor, Consumers Power Co., Jackson, Michigan.

handled by a ⅓ or a ½ HP electric motor. There is no need to fuss with a gas engine or tie up a tractor for their operation. And with an electric motor you simply start or stop the mixer with the flick of a switch. It's ready to go whenever you are.

The motorizing of a concrete mixer is simple. You can build a motor supporting base onto the frame of the mixer. Or, as shown here, you can make a separate motor stand. This motor stand was built from scrap lumber such as can be found on most farms. It was put together with nails and is tied to the mixer frame with 2 machine bolts. The top of the stand has 2 slots through which the motor is bolted in place. This allows the motor to be shifted, in order to adjust the belt tension. A motor starting switch is also mounted on the stand. It should be the type that provides overload protection for the motor.

Current is supplied through a heavy-duty rubber covered extension cord. This should be #14 wire and 50 feet makes a good length. This will make it possible to set the mixer close to the job, thereby saving steps.

Information On Belts

Choose a motor pulley that will give you a barrel speed of approximately 25 RPM. A single ½" Vee belt will give excellent service for this equipment. A flat pulley can be driven by a Vee belt from a smaller Vee pulley as long as the flat pulley is 2½ times the diameter of the small pulley. If the flat pulley is not this much larger than the smaller pulley, excessive slippage will result.

To find the length of the belt required, measure the diameter of the pulley on the motor and the pulley on the mixer. Add these diameters together, multiply their sum by 1.6 and then add twice the distance from the center of one pulley to the center of the other. For example, if you have an 8" pulley and a 2" pulley and there are 15" between their centers, you will need a 46" belt. (8"+2"=10"×1.6=16"+30"=46".) When measuring Vee pulleys, make sure to take

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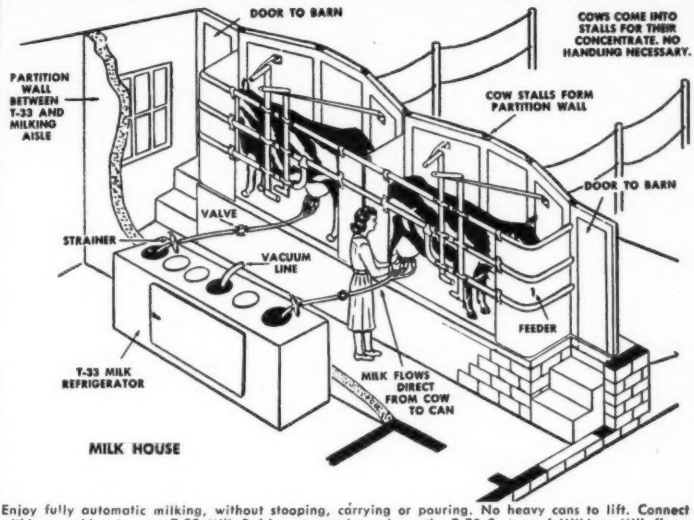

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THERMOTAPE keeps water pipes from freezing—even in coldest weather. Simply wrap around water pipes and plug in—that's all there is to it. Comes in 6-12-20-40 and 60 ft. lengths. Sold at leading hardware and farm stores.

SG ADJUSTAT

THERMOTAPE when used with a SMITH-GATES ADJUSTAT (Thermostat) only goes to work when the weather drops to freezing. The Thermostat gives automatic control at all times.

SMITH-GATES WATER WARMERS

POULTRY WATER WARMERS automatically provide the correct temperatures for drinking water and keeps fountain open in all kinds of weather. Simply place in fountain and plug in. Built to last. Insulated, rust proof, water tight.

WRITE FOR FREE CIRCULAR TODAY.

SMITH-GATES CORP. PLAINVILLE, CONN.

the outside diameter. They are not measured at the base of the groove.

Make a cover to shield the motor from dirt and water. Light sheet metal can be used for this purpose. Leave enough clearance between the motor and the cover so that there is ample air circulation.

There are different concrete mixtures. A good, general purpose mix is 1 part of cement to 2½ parts of sand to 4 parts of coarse aggregate (washed stone with maximum diameter of 1½".) If you do not have access to the coarse aggregate, a mix of 1 part cement to 3½ parts of sand may be substituted. If you plan a special job, make sure that you have the correct mixture. Measure the material carefully. Concrete requires from 4½ to 6¾ gallons of water per sack. A garden hose, with a nozzle, run out to the mixer will enable you to provide the correct amount of water to insure uniform batches.

When moving the mixer, the bolts connecting the motor stand to the mixer frame are removed. When not needed for the mixer, the motor and stand are used elsewhere.

Don't Save Garbage—Save Steps

. . . . . (Here from page 7)

alone. However, additional capacity in the septic tank is desirable in order to handle the increased solids loading caused by the food-wastes unit. The most common mistake in building septic tanks is that the tanks are frequently too small for service, either with or without food-wastes. An adequate sized tank will assure better service and less frequent cleaning. Most authorities now suggest a 30 to 50 per cent increase in volume of a septic tank which is designed to serve a food-waste unit.

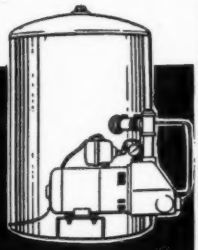
The present trend in septic tank regulations is to specify tank sizes on the basis of the number of bedrooms to be served, as typified by the recent recommendations of the Housing and Home Finance Agency and the Federal Housing Administration of the U. S. Government. The following table gives the minimum suggested size of septic tanks to serve sewage and food-wastes shredding fixtures:

No. of Regularly Occupied Bedrooms in Home	Normal Liquid Capacity of Septic Tank
2 or less	500 gallons
3	750 gallons
4	1,000 gallons
5	1,250 gallons
6	1,500 gallons
7	1,750 gallons
8	2,000 gallons

If prefabricated tanks are used, the size nearest the tabulated size should be installed. In the case of multi-chamber tanks, the first compartment should contain two-thirds of the total tank capacity and the second compartment one-third of the capacity. The first compartment of any multi-tank installation shall have at least 500-gallon capacity; this would mean that any 500-gallon tank could not be multi-tank in design. In the case of food-wastes units which are installed in connection with existing septic tanks, two courses of action are open to the householder: (1) increase the size of the septic tank by replacing the existing tank or installing another tank in parallel with the existing tank; or (2) leave the tank capacity as-is and depend upon more frequent cleaning of the deposited sludge.

The success of any septic tank system depends on adequate disposal of liquids leaving the tank. As far as the effect of food-wastes disposal on sub-surface leaching systems, it may be broadly stated that any system of subsurface disposal which works effectively for sewage alone should work equally effectively when food-wastes are added to septic tanks. The increase in quantity of liquids discharged into any septic tank from a wastes unit is so small that the disposal of the liquids poses no unusual problems.

Thus, the benefits of eliminating garbage which holds out such high promise for the health and convenience of city dwellers are available to rural folks. You can stop breeding and feeding transmitters of disease in your own backyard. The farm housewife who uses a kitchen wastes unit will certainly say "Good riddance to bad garbage."



install and forget!

FAIRBANKS-MORSE

Self-priming Pump

You get the kind of trouble-free water service every home owner wants when you install a Fairbanks-Morse self-priming shallow well water system.

This self-priming pump has only one moving part. It has no belts or gears to wear out. The ¼ hp. motor has life-time sealed bearings at the pump end. Rotary seals prevent leakage between pump and motor. Pump is self-priming to depths of 25 feet. Will deliver as high as 600 g.p.h. Comes complete with 42-gal. tank, ready to plug in and use. For details see your Fairbanks-Morse dealer, or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,

a name worth remembering

Sanitary BARN CLEANER

Removes and loads electrically.

Write to the oldest manufacturer of electric barn cleaners for information and estimates.

Eau Claire Equipment Co.

513 North Michigan Street • Eau Claire, Wis.

POULTRY TIME SWITCHES

Get MORE Eggs While Prices Are HIGH

Uniform Lighting, Fall and Winter, Assures More Eggs, Healthier Hens

EASILY SET—FULLY AUTOMATIC

With or Without Dimmer Circuit — All Electric or Manually Wound

Switches Serviced $2.50 min.

4 MODELS—$11 to $18

Automatic Electric MFG. CO.

AT YOUR DEALERS OR WRITE

10 State Street MANKATO, MINN.

Barn Cleaners Here to Stay

. . . . . (Here from page 11)

Length of time barn cleaners installed:

Less than 1 year	71
One-two years	264
Two-three years	142
Three-four years	73
Four-five years	34
Over five years	12
Not reporting	54

•Not all farmers answered every question, thus the different totals.

There can be little doubt about the fact that:

1. A barn cleaner saves work. Above all, the elimination of the hard, unpleasant task of barn cleaning by hand appeals to every farmer, who has enough other exacting chores as it is. This is particularly important during heavy work seasons in the field—planting, cultivating, harvesting. With the energy saved, he is better able to put it to good advantage in giving better care to his stock, or to taking on additional stock.

2. Better barn sanitation is possible. Most health inspectors today agree that a farmer keeps his barn in better condition than he did before installing the equipment.

3. More production through the *addition* of new stock is made possible when the savings in time and labor are re-invested in new stock and equipment.

4. The most recent improved models are adaptable to most any type of barn—as witness the round barn cited above.

One pig saved by means of an electric brooder more than pays the season's cost of the current used in operating the brooder, report New Jersey farmers.

"I'll fix your shirt later, dear—I'm washing dishes right now!"

SHAVES A WEEK'S GROWTH SLICK AS ONE DAY'S

Whisker® THE SHAVER THAT CONVINCED THE BARBERS

Many Barbers use a *Whisker* to shave themselves and recommend it to customers. *Whisker*'s refined hair-clipper action and .002" thin blade removes 1 to 7 day beards clean and close. Fast . . . 14,400 strokes per minute. Quiet . . . operates on 110 v., 60 cycle AC. No TV or radio interference. Women like *Whisker*, too, for safely removing superfluous hair on legs and under arms. Get *Whisker* at your Barber or Dealer.

ELECTRO TOOL CORPORATION

DEPT. W461-L • RACINE, WISCONSIN

See your Barber or Dealer. If he cannot supply you, USE THIS COUPON TO ORDER

ELECTRO TOOL CORP., Dept. W461-L, Racine, Wis.

☐ Enclosed find $15.95 (check or money order). Send *Whisker* POSTPAID.

☐ Enclosed find $5. Send *Whisker* C.O.D.

☐ I'll pay postman balance plus postage.

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Address_____

City_____ Zo.___ State_____

DIAMOND IRON REMOVAL FILTER

Removes iron and other foreign matter which makes water discolored or cloudy. Leaves it crystal-clear and palatable. Moderate cost. Write for free booklet giving full information.

OSHKOSH FILTER & SOFTENER CO.

Oshkosh, Wis.

START AND STOP
FARM EQUIPMENT
Automatically!

HANDY TIME SWITCHES

See your dealer for these compact, easily installed switches. Type T-47 for timing yard lighting, pumping, ventilating offers single ON-OFF in 24 hours. Saves you worry and trouble of switching equipment manually.

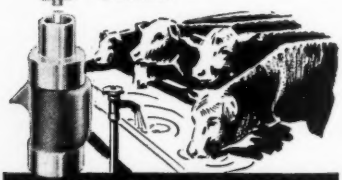
Poultry-house model, Type T-470, offers two ON-OFF operations plus dimmer circuit for proper, more profitable roosting.

Here's top-notch economical efficiency at rock-bottom cost. For more details, write for Bulletin GEC-578, Section 603-111, General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC

Strataflo
FREEZE PROOF
HYDRANT
YEAR 'ROUND
OUTDOOR
WATER SERVICE

Running water for stock all winter. Shut-off valve is below frost line. Hydrant drains automatically. Easy to install . . . lasts a lifetime.



PLEASE TELL US MORE!

STRATAFLO PRODUCTS, INC., Fort Wayne 1, Ind.

Please send Bulletin No. 901 on Strataflo Non-Freezing ☐ Yard Hydrants; ☐ Wall Hydrants.

NAME

CITY

COUNTY STATE

SAVE TIME AND LABOR

Questions and Answers

Brooding Without Hover

▶**Question:** *When brooding with infrared lamps, are the lights placed under a hover of any sort? Also are the chicks confined to a small area at first or are they allowed to run at will.* Mrs. S. B. W., Illinois

▶**Answer:** Infrared lamps have been used with a hover for chick brooding. More recently, however, they are being used without any form of hover. The chicks are confined by means of a low (15") cardboard barrier. This is used for just the first week to 10 days.

DC Motor on AC Current

▶**Question:** *If I purchase a one half H.P. 27 volt DC 4000 R.P.M. motor and change the brush leads to AC will the motor be as good as a one half H.P. motor? Also could you tell me if the low cost plug-in electric welders, selling for from ten to twenty-five dollars, are good for welding heavy galvanized iron?* B. B., Wisconsin

▶**Answer:** Motors designed for operation on direct current cannot be operated on alternating current. Neither can they be readily rewound without incurring as much expense as would be involved in the purchase of a new motor. We discourage such attempts at conversion.

Small 110V plug-in electric welders will not handle heavy iron. With patience and care small welds on light metal may be achieved but they are not intended for constant use. If you have a specific job for which you desire such a welder, try some sample pieces, using the welder, before purchasing.

Motor for Water Pump

▶**Question:** *I have been using a 1¾ H.P. gasoline motor to operate my water pump. It supplies water to a 30,000 gallon tank from which the water flows by gravity to my feed yard water tanks. What size and type of electric motor would I use on this water pump? Could it be operated by a time switch set to pump for 45 minutes and then to shut off for 45 minutes? Would this continual starting and stopping of the motor affect the electric consumption and the length of the motor life?* B. A. S., Illinois

▶**Answer:** A 1 H.P. capacitor type motor should be suitable for operating your water pump. You can obtain time switches for the purpose of turning it on and off at pre-determined intervals. Frequent starting and stopping of a motor places additional load on the starting windings. During the starting period the motor will draw several times its normal running current. However, the frequency with which you wish to start the motor will have no noticeable effect on the current consumption, nor will it affect the motor's life.

Current for Pig Brooding

▶**Question:** *I am interested in installing infrared heat lamps in the hog house. Can you give us an idea what it costs to operate these lamps? Is 250 Watt the only size available? It seems that such lamps burning for 24 hours a day would run the electric bill up—or don't you use it all day?* K. L. B., Michigan

▶**Answer:** Infrared heat lamps may be obtained in several sizes, the 125 and 250 Watt sizes being most popular. The 125 Watt size will consume 1 Kilowatt hour for each eight hours of operation. The 250 Watt size will consume 1 Kilowatt hour for each four hours of operation. In brooding pigs the lamps should be left on continuously. The cost of operation can be more than made up by the increased health and decreased mortality of the litter. Agricultural Experiment Stations report a reduction of 50% in pig losses where electric pig brooders are used. It has been estimated that they can save an average of one pig per litter. That one pig will pay for quite a bit of electricity. The bulbs are just used for the first 10 days.

Electric Eye Information

▶**Question:** *We would like to have a warning signal operated by an electric eye. Can you give us the following information, on this type of control: Will it work or give warning in the daytime as well as at night? Will it operate a buzzer or bell in the house or other building? How wide a space will it span to work across successfully? Can I buy assembled sets or do I have to buy components and assemble them myself?* P. M. P., Ohio

▶**Answer:** A photo-electric cell may be used to operate a buzzer or a bell or other signaling device as required. It will work in the daytime as well as at night. It can be used for varying distances, depending upon the apparatus' construction. Assembled units are available that will cover a distance of 75 feet in one straight line. This distance may be extended by the addition of focusing mirrors.

What Would You Say?

CONTEST

Awards for Aug.-Sept. Contest

"The hay's no longer in the rick
We cure it in the mow
These blowers really do the trick

FIRST PRIZE—$25 Cash

"Less toil, no spoil, top "chow"!

Mrs. Norma Bennett
R.F.D. 4
Oconomowoc, Wisconsin

SECOND PRIZE—$10 Cash

"Green pastures indoors now."

Quinton Callies
Lomira, Wisconsin

Five Consolation Prizes—$3 Each

"No leaf-loss, rain-bleach now."

Mrs. Evangeline Anhauser
Rt. 2
Beaver Dam, Wisconsin

"Better forage for the cow."

Mrs. Charles Didion
R.F.D. 1—Box 73
Monroeville, Ohio

"Safeguards both barn and cow."

John C. Parks
Stockwell, Indiana

"No waste from field to cow."

Mrs. Lillian V. Stauffacher
R.F.D. 4—Box 8
Monroe, Wisconsin

"Keep vitamins in, and HOW!"

Mrs. Albert S. Zwiebel
Wapakoneta, Ohio—R.F.D. 5

Honorable Mention

Richard F. Abbott, Box 24, Bethel, Vermont, Mrs. Erwin Bohnsack, R.F.D. 2, Hillsboro, No. Dakota, Mrs. R. E. Burmeister, Rt. 3, Box 169, Ft. Worth, Texas, William P. Heath, R. F. D. 1, Esmont, Virginia, Harold K. Herzig, Griswoldville, Massachusetts, Raymond T. Kizer, R.F.D. 1, Box 421, Osceola, Indiana, Mrs. Clara Mayer, R. 11, Clarksville, Iowa, Mrs. Edgar Miller, Logan, Kansas, Mrs. Lillie Myers, Portageville, Missouri, Mrs. L. L. Peters, Box 193, Cromwell, Minnesota, Miss Ida Stoffel, R.F.D. #1, Bloomington, N. Y., Mrs. Henry Storle, R.R., Scobey, Montana, Mrs. Henry Van Fleet, Black Creek, New York.

Here is a contest the whole family can enjoy. Cash Prizes will be awarded for the best suggestion for a fourth line to complete the verse at the bottom of this page. Lots of fun and you may win $25 cash.

RULES—NOVEMBER CONTEST

Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $25 cash; the second prize $10. In addition, five consolation prizes of $3 each will be awarded for the best last line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries must be sent to the Contest Editor, ELECTRICITY ON THE FARM Magazine, 8 So. Dearborn Street, Chicago 3, Ill. before Dec. 1.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM Magazine.

Winning names and entries will be announced in the January 1952 issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

It's dark at choretime now, and cold
And winter's drawing near
So flip the switch and then behold
? ? ? ? ? ?

My suggestion for a fourth line to the above verse is:

.....

(A) Do you have an electric water pump? If yes, how old is it?.....: Do you contemplate adding to or replacing it in the next five years? .....: If so, what difference in type or capacity will you look for?

.....

.....

.....

My name is .....

R.F.D. .....Post Office.....

County..... State.....

See. 34.66, P. L. and R.
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24 W. 40th St., New York 18, N.

WHAT? No more Old-Fashioned THANKSGIVINGS?

There's no time consuming, oven peeking, pot watching or guessing while the meal is cooking. Set the time and temperature control and forget the cooking—it's simple and easy. Correct timing and correct temperature control result in tastier, better cooked foods.

Electric cooking is economical, fast and clean . . . it's safe because it's flameless. There's no fuss and bother of carrying fuel or ashes, filling tanks or changing fuel drums.

Electricity is the only "HELPER" that can be used exclusively for "ALL" essential farm-home jobs—lighting, cooking, refrigeration, water heating, washing, ironing, water pumping and numerous other tasks—at low cost.

This magazine is sent to you without cost or obligation as part of our service to Rural Customers, that you may be informed on the many uses for Electric Service as they are developed.

GENERAL MINNESOTA UTILITIES COMPANY